The Craft and Concepts of Interpretation: A Look at How National Park Service Interpreters Reveal and Facilitate Opportunities for Connections

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ABSTRACT

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Wei-Li Jasmine Chen

The Interpretive Development Program (IDP) of the National Park Service (NPS) formulates and maintains the national standards for interpretation by providing professional development opportunities and administrating a peer review certification process of interpretive products. This study explores the little-understood phenomena of how opportunities for intellectual and emotional connections between the resource and the visitor are created by NPS interpreters. Analyzing the program content from forty-nine interpretive talks and writing examples submitted to the IDP for review from July to November of 2001, the researcher has identified four interpretive strategies interpreters used in developing opportunities for intellectual and emotional connections with resource meanings. The researcher also documented how connection opportunities reflect the conscious efforts of interpretive development.

A comprehensive review of existing theories on the concepts of meaning, interpretation, and connection leads to the construction of a conceptual framework. Drawing discussions from theoretical traditions including classic sociology, symbolic interactionism, social constructionism, phenomenology, and behaviorism, the conceptual model suggests that through the processes of ascribing, constructing, making, realizing or being stimulated by meanings, individuals can form more personalized and/or more shared understanding with resource meanings. The model also highlights the role of interpretation in revealing meanings and relationships that are potentially contained in the resource. The meaning-revealing process of interpretation provides opportunities for the mutual transaction of meanings between the interpreters and visitors. The study contributes to fundamental interpretive knowledge and lays the ground work for interpretive theory advancement.

The study contributes to interpretive managers, trainers, and planners by providing examples and discussion of intellectual and emotional connection opportunities. The study informs our understanding of how opportunities for connections can facilitate meaningful interactions between the resource and the audience. Study results from product analysis suggest how interpretation brings out and clarifies embedded meanings, how it helps people better communicate the meanings of their heritage, how it enhances intuitive understanding and holistic experiences, and how likely it can satisfy the basic human needs to create and sustain meanings in a seemingly purposeless world. In summary, the study explores the value of interpreting resource meanings in fostering a sense of care and stewardship ethic.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Interpretation is a process of communicating the meanings and values inherent in the resource to an audience in a recreational setting (Tilden, 1957/1977; Machlis, 1992; Zuefle, 1997). People who deliver interpretive programs call themselves interpreters, naturalists, nature guides, docents, tour guides, or heritage interpreters. Interpretation can be personal (i.e. talks, interpreter-led hikes, campground programs, etc.) or nonpersonal (i.e. exhibits, waysides, films, and publications). Interpreters strive to foster a sense of care and stewardship among visitors toward the resource. Interpretive programs occur not only in federal government administered settings including national parks, national forests, fish and wildlife refuges, and reservoir areas, but also at state government managed state parks, highways, and waterways. Furthermore, private and non-profit entities employ interpretation in museums, zoos, aquariums, historic buildings, and theme parks. As visitors encounter interpretation in these various settings, the common denominator is that visitors receive and react to these messages of their own free will. Because of this unique characteristic, interpreters who incorporate various artistic techniques, create compelling stories out of their materials, or convey the intricacies of ecological relationships or chain of events find themselves in the presence of people who have varying levels of interest or willingness to understand them. Due to the diversity of interpretive settings, practice and audiences, interpretation has always struggled to "prove" its value and meanings as a profession.

Based on the mission of the National Park Service (NPS) and the legacy of interpretive philosophy, the NPS interpretive specialists at the Stephen T. Mather Training Center, Harpers

Ferry, West Virginia, and about three hundred field interpreters have taken the lead in advancing interpretive theory and identifying components for effective interpretive services by establishing the Interpretive Development Program (IDP). Ten competencies were designed to foster professional excellence in interpretation in the NPS. For each of the interpretive competencies, the IDP identifies essential knowledge, skills, and abilities for every interpretive ranger in various Ranger Careers positions (NPS, 2001a). A curriculum module supports training and self study in each competency. After studying the curriculum, an interpreter who chooses to participate in the peer review certification program will submit a program or product that attempts to demonstrate the following national standard. The interpretive product is:

> (1) successful as a catalyst in creating an opportunity for the audience to form their own *intellectual and emotional connections* with meanings/significance inherent in the resource; and
>
> (2) appropriate for the audience, and provides a clear focus for their *connection* with the resource(s) by demonstrating the cohesive development of a relevant idea or ideas, rather than relying primarily on a recital of a chronological narrative or a series of related facts (NPS, 1997a; 2000, italics added).

As an ongoing process, the IDP seeks to better understand, analyze, articulate, and maintain this national standard of interpretation. Seizing the opportunity to better understand the trend of thoughts and actions, this study explores the role of theory in developing interpretive opportunities. Prior to the time when the study was proposed, the terms "connection" and "opportunity" were not well-defined. The IDP competency submitters and certifiers (peer reviewers) relied on the assessment standard or "rubric" (which is cited above) to prepare and review various competencies. In April 2001, the IDP began to identify the operational definitions

for the two terminologies. However, currently there is no research or theoretical discussion on the "**opportunities** for **intellectual and emotional connections"** between the audience and resource meanings. The study presents a systematic view of interpretation by examining both existing theories and actual interpretive products.

Research Questions

A study of the opportunities for intellectual and emotional connections between the meanings of the resource and the interests of the visitor in National Park Service interpretive products raises the following questions:

1. How have the concepts of meaning, interpretation, and connection been understood within sociological and philosophical traditions? And does that effect the development of opportunities for intellectual and emotional connections to meanings?
2. What are the types and characteristics of opportunities for intellectual and emotional connections to resource meanings in the products submitted for review? What do interpreters do to create the opportunities for connections?
3. What are the implications to employee and program development, interpretive planning, and resource management once the opportunities for connections with resource meanings are provided?

Study Significance for Theory

This project contributes to fundamental interpretive knowledge and research tradition in three perspectives, including exploratory, explanatory, and descriptive. This study has investigated the little-understood phenomena of how opportunities for intellectual and emotional connections between the resource and the visitor are created by interpreters. The four interpretive strategies identified provide logical constructions that explain the phenomenon. The study draws discussions from theoretical traditions including classic sociology, symbolic interactionism,

social constructionism, phenomenology, positivism, and behaviorism. Two elements of this study lay the groundwork for interpretive theory advancement: the systematic review of existing theories on meanings (Table 1, p. 12) and the conceptual framework of meaning, interpretation, and connection (Figure 2, p. 37). The conceptual framework appears to illustrate the characteristics of a good theory that Kuhn (1970) stated: scope, simplicity, and fruitfulness for management, training and planning.

Study Significance for Practice

The study contributes to the work of interpretive managers, trainers, and planners by providing examples and discussion of intellectual and emotional connection opportunities. The study informs our understanding of how opportunities for connections can facilitate meaningful interactions between the resource and the audience. They study also explains how interpretation brings out and clarifies embedded meanings. The study provides examples of developed opportunities for connections and the strategies used to develop those opportunities that might benefit trainers, interpreters, and certifiers. In addition, the study provides potential ways that interpretive planners could incorporate these concepts in the comprehensive interpretive planning process.

Operational Definitions

Interpretation: Interpretation is considered a communication process which "aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information" (Tilden, 1957). Wang (1998) describes interpretation as "[it] relates the purpose and significance of a natural area or heritage site, introduces outstanding natural or cultural features, explains how natural or social systems function(ed) in the past and present, and translates scientific concepts or diverse cultural perspectives into ideas easily understood by the public" (p. 1).

Interpreters/interpretive rangers: People who deliver interpretive programs consider themselves as interpreters, naturalists, or nature guides. For the National Park Service, an interpretive ranger performs in areas that include resource education, resource protection, and public use management (NPS, 1991a).

Interpretive Development Program (IDP): A "customized, outcome-based" program developed by more than 300 NPS interpreters and trainers in order to advance the excellence of interpretive service and "to foster professionalism in interpretation in the National Park Service" (NPS, 2001a).

Interpretive product: Interpretive programs created by NPS interpreters (including permanent, seasonal and volunteer interpretive rangers) are referred to as interpretive products. A product could be in oral format and recorded on a video tape. Or it could be in written format that might be used in park publications or exhibits. In this study, the researcher aims to examine two categories of NPS interpretive products: Module 103 (interpretive talk) and Module 230 (interpretive writing).

Resource: Both tangible objects and intangible meanings that the park site preserves, manages, and interprets.

Visitors (or audience): People who visit a recreation setting physically are called on-site visitors. People who use Internet or other electronic device to acquire site information are prospective visitors.

Connection: "A link between visitor experience/interests and a meaning of the resource. Connections can be subtle or sublime and relate to places, things, and ideas. May be described as moments of intellectual and/or emotional revelation, perception, insight or discovery related to the meanings of the resource" (NPS, 2001b).

Opportunity: "A favorable set of circumstances that sets up a potential connection (see above), as prompted by an identifiable action or technique used by the interpreter" (NPS, 2001b).

Tangible (or tangible resources): For the IDP, "Tangible resources can be objects, places, people, or events. Resource professionals seek to preserve, conserve, and remember tangible resources. Tangible resources include events (historical and natural) and people from the past" (NPS, 2002a, p. 3).

Intangible (or intangible meanings): For the IDP, "Each tangible resource has an incredible variety of intangible meanings. Those meanings can be obvious and popular or obscure and controversial. The more Knowledge of the Resource (KR) and Knowledge of the Audience (KA) an interpreter has, the more meanings can be linked to the tangible" (NPS, 2002a, p. 4).

Tangible-intangible link: The IDP believes that tangible-intangible links are the "basic building blocks of interpretation." It further explains, "Audiences wish to connect personally to the subject and/or resource. Sometimes this occurs through their understanding of context, insight, discovery, revelation—the intellectual. Other times it comes through the emotions—enjoyment, sensation, spirit, renewal, empathy, wonder, challenge.

Connecting experiences occur when the tangible resource is linked to some larger intangible meaning in a way that the audience can relate to and that provokes understanding and/or appreciation. Intangible meanings speak to different people in different ways. Only when the tangible/intangible link is personally relevant does an individual connect to the resource" (NPS, 2002a, p. 4).

Methods (or methods/techniques): The IDP considers that choosing and developing appropriate methods is a critical step to develop opportunities for connections. The IDP explains that "there are many ways to develop a link into an opportunity for an emotional or intellectual connection to the meanings of the resource. Success depends on the link, the theme, the interpreter's KR and KA, style, and the purpose of the interpretive product. Stories, explanations, quotes, activities, demonstrations, examples, evidence, illustrations, questions, and discussions are just some of the methods interpreters use" (NPS, 2002a, p. 8).

Strategy (or interpretive strategies): This study identifies several *sets* of methods or techniques used by the interpreters to develop opportunities for connections with the meanings of the resource by demonstrating substantial knowledge of the resource meanings and knowledge of how the audience might ascribe, construct, share, reflect upon, or be stimulated with the particular resource meanings.

Unit of analysis: In this study, a unit of analysis is defined as an opportunity for an intellectual or emotional connection to resource meanings via a tangle-intangible link that is developed using an appropriate a method.

Submitter: NPS interpretive rangers who submit their products for the IDP are submitters.

Certification standards: A standardized rubric language that has been reviewed and practiced by the IDP to examine the interpreter's knowledge, skills, and abilities in delivering interpretive services. There are ten competencies in the IDP and they all have identified national standards for certification. These standards stand as a goal to foster interpretive excellence nationwide in NPS areas, at whatever stage of an employee's career. Anyone may participate in the peer-review process as part of their personal development, but the essential competencies are specifically designed to support a person's development as part of a Ranger Careers position in interpretation (NPS, 2001a).

Certifier/Reviewer: People who peer review the interpretive products and determine whether they demonstrate certification standards are reviewers. Usually, one product is examined by two reviewers.

Demonstrating certification standards: An interpretive product that has successfully demonstrated the national standard is said to be a "demonstrating certification standards."

Approaching certification standards: An interpretive product that has not fully demonstrated the national standard is said to be "approaching certification standards."

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter presents an overview of the concepts of meaning, interpretation, and connection, examines their characteristics and relationships, and presents a typology of connections based upon an examination of the literature. The literature to be reviewed in this section covers three interrelated areas: (1) the nature of meanings, (2) the process of interpretation, and (3) the types of connections people experience as they interact with their world. A conceptual framework that links these three areas will be presented. The term *interpretation* as used in this chapter spans two distinct areas of scholarly and professional practice: interpretation in a resource management context, and interpretation in social theories. In social theories, interpretation is viewed as "a basic and universal human activity" (Zeedani, 1982).

Any systematic knowledge, such as biology, engineering, or political science, is comprised of three dimensions: theoretical, practical, and philosophical. The theoretical aspect emphasizes the causal, logical, or coherent elements of that knowledge. The practical approach seeks to apply theories in the most efficient and workable fashion. The philosophical dimension asks fundamental questions regarding the nature and structure of that knowledge. In the field of resource stewardship and heritage preservation, interpretation has traditionally emphasized the practical dimension of program delivery and site management. Great volumes of texts have been written to provide "tools" for better interpretive practices, including giving talks (Thompson, 1968; Grater, 1976; Lewis, 1980; Risk, 1982; Ham, 1992), guiding walks (Freed & Shafer, 1981; Regnier, Gross & Zimmerman, 1992), preparing slide shows (Lewis, 1980; Podracky, 1983;

Ham, 1992), enhancing informal visitor contacts (Sharpe & Hodgson, 1982; Wallace, 1990), designing labels, signs, and exhibits (McIntosh, 1982; Bitgood, 1987; Trapp, Gross, & Zimmerman, 1991; Kuehn, 1993), writing publications (Zehr, Gross, & Zimmerman, 1990), developing small-scale to comprehensive interpretive plans (Alderson & Low, 1985; Bucy, 1991; Bruce, 1999; Kohen & Sikoryak, 1999); conducting training (Watson, 1986; Hankins, 1991; Ham, 1992), and developing management strategies (Manuel, 1992; Knudson, Cable & Beck, 1995). To better understand interpretive practices and outcomes, interpretive scholars have incorporated theories of cognitive development (Piaget, 1952; 1955), moral development (Kohlberg, 1971), and learning styles (Jung, 1977; Keirsey & Bates, 1978; Golay, 1982) from education; the concepts of motivation, information processing, selective attention, shadowing, persuasion, theory of reasoned action, theory of planed behavior, and flow (Maslow, 1954; Miller, 1956; Moray, 1959; Cherry, 1966; Solso, 1979; Ajzen & Fishbein, 1980; Smith, 1982; Csikszentmihalyi, 1990; Petty & Cacioppo, 1990) from psychology; and effectiveness, agenda-setting, and media-framing (Schramm, 1971; McCombs & Shaw, 1972; Entman, 1989; Zhu, 1992) from communication. Until recently, the philosophical dimension of interpretation has received only cursory attention among scholars. Freeman Tilden, a pioneer philosopher in interpretation, outlined six principles of interpretation in his classic work, Interpreting Our Heritage, published in 1957. He emphasized that interpretation "aims to reveal meanings and relationships," and that the goal of interpretation is to facilitate audience connections with the meanings inherent in the resource (Tilden, 1977, p. 8).

THE NATURE OF MEANINGS

To understand how meanings are revealed through interpretation, it is helpful to begin by studying the nature of meanings. Are meanings given, created, constructed, realized, ascribed, aroused, stimulated, or simply learned? Are most resource meanings understood at a personal or a social level? Classical philosophers and sociologists such as Immanual Kant, Max Weber, and George Herbert Mead incorporated knowledge regarding the nature of meanings into their theories. To understand early conceptions of the nature of meanings, and how subsequent scholars built upon and expanded these conceptions, it will be helpful to briefly examine the concept of meanings in general, and then explore the theoretical bases of meanings in (a) interpretive sociology (Durkheim, Marx, and Weber), (b) symbolism (Geertz and Berger), (c) constructivism (Gergen and Bruner), (d) phenomenology (Husserl, Heidegger, Gadamer, and Rioeur), and (e) behaviorism (Watson and Skinner). These approaches vary in terms of how they view meanings ranging from subjective beliefs to transcendent symbols, cultural understandings, intuitive consciousness, and stimulated responses, which will be discussed individually. These approaches are neither mutually exclusive nor do they necessarily represent all existing thought regarding meanings. Rather, they represent identifiable strains of thought and explicit alternatives that facilitate an understanding of the nature of meaning.

The concept of meaning has been closely associated with the notions of significance, sense, intention, purpose, inclination, expression, and interpretation (Simpson & Weiner, 1989). When something is meaningless, it implies it is without meaning or signification, devoid of expression, or without purpose (Simpson & Weiner, 1989). Human science research has emphasized meaning as central. As Van Manen (1990) summarized, "To be human is to be concerned with meaning, to desire meaning" (p. 79). Meanings occur in some kind of context,

including a spatial context and a social context. To understand the meanings of a subject or object is to understand those meanings within a given context. One of the most significant contexts of meanings is spatial context. Scholars have approached meanings in the context of "place" and tend to tightly link these two concepts. According to Tuan (1974, 1977), places anchor meanings. Tuan (1974, 1977) further explained that place represents a collective expression of the intellectual and emotional meanings that people attach to a place. Relph (1976) contended that place fuses meaning, action, and context. Greider and Garkovich (1994) describe "landscapes" as the "symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs" (p. 1). Scholars have examined what happens when there is a loss of proper connection between places and meanings (Lynch, 1972; Jacobs & Appleyard, 1987; Kunstler, 1993; Arefi, 1999). Some scholars have emphasized the need to link peoples' spatial and social perspectives (including mind, values, experiences, and benefits) in research and planning (Harvey, 1973; Reed, 1997; Pierskalla, 2000).

Social perspectives represent another significant context for meaning. Postmodernism, constructivism, and multiculturalism are three distinct conceptual frameworks within which the concept of meaning is analyzed (D'Andrea, 2000). Postmodernism calls into question traditional assumptions about the nature of truth (i.e., truth as absolute) and tends to view reality as a socially constructed phenomenon (Schneider, 1998; Tierney, 1993). Constructivism is a process by which individuals (i.e., psychological constructivism) and groups (i.e., social constructivism) actively construct meaning and ascribe significance to life experiences (Mahoney & Lyddon, 1988; Sexton & Griffin, 1997; Guterman, 1994). Multiculturalism examines the unique belief

systems and truths that people from diverse cultural groups create to define their identity and understand their life experiences (Daniels & D'Andrea, 1997).

Table 1 presents five approaches to meanings as outlined in the literature. It also describes how theorists conceptualized meanings (Wuthnow, 1987; Grant, 2001). The *subject*-centered approach maintains that meaning resides primarily in beliefs, attitudes, opinions, and other cognitive structures. For these theorists, the fundamental human dilemma is overcoming the gap between subjective thoughts and objective conditions. Meanwhile, the *symbol*-centered approach argues that human conduct is fundamentally symbolic and therefore laden with meaning for social actors. This approach maintains that meanings are, for the most part, represented by symbols. Further, by their very nature, humans desire holistic meanings. The third approach, the *culture*-centered approach, focuses on how people communicate shared meanings. For these theorists, the chief human desire is not that of overcoming the split between subject and object, nor is it transcending fragmentation to arrive at wholeness. Instead, the chief human dilemma is how to make sense of the meanings that are embedded in language and culture. The forth emphasis, the *consciousness*-centered approach, recognizes that meaning is contextual in nature. Humans seek and find meanings through self-initiated processes by which they consciously experience the lifeworld. In addition, because individuals are purposive and intentional, they are free to choose how they create their future and establish their sense of the world. The fifth approach, the *response*-centered approach, concludes that meanings are quantifiable responses to recognizable, measurable, external or internal stimuli. Desirable and undesirable responses/meanings can be modified through the provision of rewards or various forms of punishments.

Table 1. The Nature and Characteristics of Meanings

Approach	The nature and characteristics of meanings	Representative thinkers
Meanings as subjective beliefs	• Meanings do not come pre-attached to experiences, they must be assigned. • Assigning meaning to the outer world involves subjective processes. • Meanings enable humans to overcome the painful gap between the subjective and objective worlds. • Meanings reside primarily in beliefs, attitudes, and opinions.	Weber, 1910; 1978; (Durkheim, 1915; Marx, 1867)[1]
Meanings as transcendent symbols	• Humans desire holistic meanings. • Meanings are constructed through and evoked by symbols. • Meanings can become compartmentalized and fragment. • Because of their symbolic nature, meanings often become "taken-for-granted." • Because of the symbolic nature of meanings, they need to be interpreted.	Geertz, 1966, 1973; Berger & Luckmann, 1966; Berger, 1967; (Weber, 1910; Schutz, 1972)
Meanings as cultural under-standings	• Meanings are culturally/socially constructed and shared. • Meanings are embedded in language and culture. • Meanings are communicated through the use of language. • Humans never encounter "objective" phenomena; objects are inextricably tied to layers of social meanings that influence how they are perceived and understood.	Gergen, 1985, 1994; Heelas & Lock, 1981
Meanings as intuitive consciousness	• Meaning is the most comprehensive description of the conscious world. • Meanings emerge through a self-initiated process of conscious reflection. • Individuals reflect upon, become aware of, realize and create meanings as they encounter the world as something of which he or she is a part. • Understanding is what gives people access to the meaning of human events. • Meanings are contextual in nature. • Meanings are sought and found through human experiences.	Husserl, 1970, 1982; Heidegger, 1962; Sartre, 1956; Gadamer, 1975; Ricoeur, 1974; (Dilthey, 1883/1966)
Meanings as stimulated responses	• The world acts upon people. • People are the products of forces that exist outside of themselves. • Meanings are identifiable and measurable *responses* to recognizable, measurable, external or internal stimuli. • Meaning can be learned or unlearned through rewards or punishment.	Watson, 1938; Skinner, 1974; Homans, 1961; Blau, 1964; Emerson, 1972

[1] Representative thinkers who are listed in parentheses wrote on topics other than meaning, but aspects of their thinking influenced scholars who studied meaning.

1 Meanings as Subjective Beliefs

Classical sociologists conceptualize meaning as a subjective feature. Many of the theories fall into a binary dilemma by asking, "Is meaning to be found within or without?" (Karshner, 2000). Grant (2001) examines the works of Emile Durkheim, Karl Marx, and Max Weber. He points out that Durkheim, Marx, and Weber examined meaning from the standpoint of how individuals create and sustain meanings. These theorists concluded that meaning is located primarily in beliefs, attitudes, opinions, and other mental constructs. For these theorists, the fundamental human dilemma is overcoming the split between subjective thoughts and objective conditions (Wuthnow, 1987). Max Weber, one of the founders of modern sociology, received his intellectual training from the neo-Kantian school of philosophy. He distinguished the act of assigning subjective meanings from reactional biological or social behavior. Weber explained that because meanings do not come pre-attached to human experience, they represent the outcomes of significant personal effort (Morrison, 1995). Further, he believed that people come to an interpretive understanding of the social world through reasoning acts. Weber states:

> Sociology is a science which attempts the interpretive understanding of social action in order to arrive at a causal explanation of its course and effects. In action is included all human behavior when and insofar as the acting individual attaches a *subjective* meaning to it. Action in this sense may be either overt or purely inward or subjective; it may consist of positive intervention in a situation or of deliberately refraining from such intervention or passively acquiescing in the situation. Action is social insofar as, by virtue of the subjective meaning attached to it by acting individual, it takes account of the behavior of others and is thereby oriented in its course (Weber, 1978, p. 4).

Morrison (1995) suggested that Weber used the term "subjective" to identify the "inner states" of humans which involves inner judgments and evaluation. Weber thus distinguished the subjective realm from purely outward behaviors. Weber's emphasis on understanding how

people (1) apprehend the world as meaningful and (2) construct social reality inspired a group of people referred to as the Weberian sociologists (i.e., R. Bendix, L. R. Oaks, E. Kiser, and M. Hechter). These scholars have examined meanings in enabling one to rationalize one's "disenchantment" with life while simultaneously engaging in meaningful personal and social actions, ranging from religion to the establishment of economic or bureaucratic systems. For Weberian theorists, meanings satisfy a basic need to find purpose in or an explanation of the brokenness they experience in the world (Morrison, 1995; Wuthnow, 1987; Grant, 2001). Thus meanings are both needed and desired.

2 Meanings as Transcendent Symbols

By combining Max Weber and George Herbert Mead's ideas regarding symbolic interaction and Alfred Schutz's perspective on constitutive phenomenon, some scholars proposed the notion of meaning as transcendental symbol (Berger, 2000; Wuthnow, 1987). Geertz (1966), Berger and Luckmann (1966), and Berger (1967) focused on the dualistic problem of the subjective-objective split and reformulated meaning as an attribute of symbols. Geertz (1966, 1973) argued that human conduct is fundamentally symbolic; therefore, it is laden with meaning for social actors. This symbol-centered approach conceptualizes meaning as a function of the specific context in which a symbol, or individual, is located. Reality is not viewed as being simply "out-there" but as something that is actively constructed by the subject through symbols (Grant, 2001). Immanual Kant defines transcendental to be that *which could never be derived from* experience, yet is necessarily *connected with* experience. In short, it is the intellectual contribution to experience, the substance of which is supplied by sense (Simpson & Weiner, 1989).

According to the symbol-centered approach, the desire for meaning is more than a desperate reaction to unequal social class struggles and dehumanizing bureaucracies. Nor can ideas be reduced simply to social structures as Marx insisted. Rather, by their very nature, humans desire holistic meanings (Grant, 2001). The everyday context of work, for instance, provides meaning to a portion of one's activity, but that meaning is typically too immediate or too compartmentalized to give meaning in any broad sense (Berger & Luckmann, 1966). Individuals, therefore, constantly seek out broader meanings to unify their disconnected experiences of work, family, and community. Grant (2001) concludes, "Such broad meanings are usually evoked by symbols that can be reduced neither to the world of facts nor to the interior subjective state of an individual" (p. 237).

Because meanings can easily become compartmentalized and/or fragmented, they often become "taken-for-granted" (Berger & Luckmann, 1966; Rambo, 1999). For Rambo, most meanings are taken-for-granted due to the fact that they are subsumed by larger symbols. Therefore, it is not enough to simply make meanings objective, or to focus attention on meanings. Rather, it is only through the engagement of interest that the pursuit of the meanings behind the symbols can begin to unfold. From this perspective, the essential human dilemma is to clarify or interpret the meanings conveyed by symbols, so that these meanings can be used to make sense of one's fragmented experience (Grant, 2001).

3 Meanings as Cultural Understandings

Within the fields of education, psychology, and sociology, constructivism has emerged as a theory which equates the idea of reality with individually and socially constructed meaning systems (Phillips, 1997). In addition, many social constructivists argue that meanings are

embedded in language and culture (Heelas & Lock, 1981). They proposed that language has a filtering effect on people's perceptions and conceptual understanding; further, people acquire meanings through culturally specific explanatory verbal networks (Tung-Sun, 1974; Awa, 1979). These scholars also stress the role that language plays in carrying out everyday tasks and mutual enterprises. That is to say, individuals draw upon language, like builders draw upon timber, bricks, and steel, to construct the world in which they live (Gergen, 1985; Saleebey, 1994).

Linguist Ludwig Wittgenstein examined the ideas of language and meaning and perceived that "each sentence is a picture of some possible state of affairs" (Grayling, 1988). One of Wittgenstein's major contributions (1953) was to clarify that meanings are expressed and understood though the "practice" of language, that is, through various forms of communication. Gergen (1994) contrasts two opposing views regarding the origin of meaning; that is, meaning as subjective belief and meaning as cultural understanding:

> In the intersubjective account of meaning, the mind of the individual serves as an originary source. Meaning is generated within the mind and transmitted via words or gestures. In the relational case, however, there is no proper beginning, no originary source, no specific region in which meaning takes wing, for we are always in a relational standing with others and the world (p. 264).

Bruner (1990) highlights that humans obtain the raw material for constructing meanings, however provisional, from their culture. Saleebey (1994) suggested that "culture is the means by which we receive, organize, rationalize, and understand our particular experiences in the world" (p. 351). A number of studies have examined how meanings are culturally constructed and shared by individuals through religious practices, myth, story-telling, folklore, and oral history (Porter, 1993; Ammerman, 1996; Warner, 1996). Story-telling and myth-making, for example, are grounded in cultures, vary in forms and styles, and yet represent the prototype and essence of cultures (Saleebey, 1994). Laird (1989) proposed that stories tend to be "more loosely organized

and more idiosyncratic," whereas myths usually "contain big truth about culture, family, and individuals, past and present." For Laird (1989) and Saleebey (1994), myths are preserved in cultures because they represent a significant fund of meanings. For example, stories of George Washington and romantic ideas about the American West have been told and shared in various forms by past generations to the present day (Graham, Ashworth, & Tunbridge, 2000).

The culture-centered approach rejects the idea that the chief human dilemma is about overcoming the split between subject and object. It also denies the need for people to transcend fragmentation to arrive at wholeness. Instead, this approach emphasizes the need to express and understand shared meaning systems (Wuthnow, 1987; Grant, 2001).

4 Meanings as Intuitive Consciousness

Grant (2001) states "Meaning is contextual in nature" (p. 238). The phenomenological approach is a century-old international movement (Embree, 1998), based upon the desire to understand the lifeworld, that is, the world of humans, "immediate experience" (Husserl, 1970; Schutz & Luckmann, 1973; Van Manen, 1990). Husserl (1970) described the lifeworld as "already there" and "pregiven." Following Husserl's legacy, phenomenologists described how individuals intend to act and interact with the world. They also examined how meaning is experienced by individuals; arguing that people's experience of the world is constituted in and by consciousness (Heidegger, 1927/1962; Embree, 1998). For Sartre, "To say that human subjects are intentional is to say that we are purposive. To be intentional is to be aimed, and we are free to choose how we are aimed toward our future" (Churchill & Richer, 2000). Ricoeur (1974) further states that meaning is the most comprehensive description of the conscious world.

According to the consciousness-centered approach, the chief human interest is not that of overcoming the split between subject and object, nor is it transcending the fragmentation to arrive at wholeness, or expressing shared meaning systems. Instead, it is how to understand the human perception of existence, the role of interpretation in all spheres of life, and the understanding and describing of universal meanings (Embree, 1998; Grant, 2001). Phenomenologists recognize that phenomenological properties are real, true features of the mind, but these properties are not always immediately perceptible by common sense (Braddock, 2001).

For phenomenologists, understanding is what gives people access to the meaning of human events (Churchill & Richer, 2000). Intellectually indebted to Kierkegaard, Heidegger and Sartre emphasized that truth exists most profoundly at the individual level. In addition, Dilthey (1977) stressed that understanding brings together different aspects of the human mind:

> Understanding consists of a synthesis of all the powers of the psyche: thinking, as well as sensing, feeling, intuiting, imaging, remembering, and so on. More importantly, understanding is what gives us access to the meaning of human events—to the purposes or goals embodied in individual acts. Heidegger would later employ this "understanding" in his own existential-hermeneutical method, and also included understanding among the essential existential characteristics of human existence (Churchill & Richer, 2000, p. 171).

Understanding, in this case, is not necessarily the result of a learning process that individuals engage in. Rather, this approach implies that knowledge is based on individuals "intuiting" or "seeing" the nature of human experiences and opposes a preoccupation with language.

To summarize, Gadamer (1962) firmly asserts the centrality of the individual human in the creation of meaning. That is, on the one hand, people experience the world as something of which they are a part. On the other hand, people see the world as comprised of elements which he or she can reflect upon. The consciousness-centered approach states that individuals are connected with the world through thoughtfulness, intentionality, or consciousness of any kind.

5 Meanings as Stimulated Responses

As a theoretical orientation with an enormous influence on academic psychology in the first half of the twentieth century, pure behaviorism rejects the idea that consciousness has any relevance to the understanding of human behavior (Watson, 1938). Established on the basis of Locke and Hume's empiricism and Comte and J. S. Mill's positivism, behaviorism insists that states of consciousness can never be understood. For John B. Watson and his followers, meanings are seen in terms of an identifiable and measurable *response* to recognizable and measurable external or internal stimuli. Rewards or various forms of discouragement—a process known as conditioning—can manipulate these responses. For behavioral theorists, the fundamental human conduct is to learn or unlearn these modifications to behavior through stimuli (Skinner, 1974).

Empiricists argue that behavior in general, and knowledge in particular, are strictly under the control of the environment. Reality, in this view, emerges through a process of sensation. Knowledge of reality is built up from successions of sensations impressed upon a *tabula rasa*, that is, a blank slate. Positivists and neo-positivists echo empiricism, advancing the argument that there is but one source of knowledge, sensation, and that through sensation one can only grasp singular and material events. Mind, therefore, and any "content" of the mind, such as the representation of the environment, is seen as nothing but a copy or reflection of matter (Moore & Golledge, 1976). John B. Watson (1913), the founder of behaviorism, argues that thoughtfulness is unreliable because self-reports may be vague and subjective, and the data thus obtained cannot be independently verified. Behaviorists believe that the world acts upon people; humans are thus the products of forces outside of ourselves.

As an extension of behaviorism, social exchange theory views social relations, and the social structures generated by the ties that bind people in different forms of relationship, as the main object of sociological investigation (Cook, 2000). Within this framework, meanings are treated primarily in terms of the pursuit of *rewards* and the avoidance of *punishment* and other forms of cost as it occurs in the social realm. Thus, exchange theorists examine power, structural sources of power, and the dynamics of power use as central to their theoretical formulations (Homans, 1961; Blau, 1964; Emerson, 1972).

THE ELEMENTS OF INTERPRETATION

The Process of Interpretation in Social Theories

Sociologist Norman Denzin (1989) provides an overall framework linking meaning and interpretation. He grounded his assertion that interpretation represents a basic and universal human activity in philosophical and sociological literature written by a large number of influential thinkers including Marx, James, Peirce, Dewey, Heidegger, Gadamer, Weber, Husserl, Sartre, Scheler, Merleau-Ponty, Schutz, Barthes, Derrida, Lacan, Geertz, Habermas, Hall, Becker, Goffman, Garfinkel, and Strauss. His work links symbolic interactionism (George Herbert Mead and Herbert Blumer) with a host of interpretive viewpoints from philosophy and social sciences which he refers to collectively as an "interpretive heritage." Denzin responded to C. Wright Mill's call for a sociological imagination that has biographical, interactional, and historical elements, developing an approach called interpretive interactionism (Jorgensen, 1990). Denzin's efforts provided interpretive researchers with a point of departure and a set of unifying themes. Denzin asserts that interpretation is, essentially the process of revealing meanings. He summarizes his viewpoint by stating: "In social life, there is only interpretation" (p. 32). In the

book Interpretive Interactionism, published in 1989, Denzin maintains that "interpretation is the process of setting forth the meaning of an event or experience" and proposes three characteristics of interpretation:

> 1) Meaning is triadic. It involves interaction between a person and an object, event or process, and the action a person takes toward that object, event, or process (Blumer, 1969, p. 9). Meaning is interactional and interpretive.
>
> 2) Interpretation clarifies meaning…. Interpretation brings out the meaning embedded in a text or slice of interaction. Understanding is the process of comprehending and grasping what has been interpreted in a situation or text (Ricoeur, 1979, p. 96).
>
> 3) Interpretation is the process of setting forth the meaning of an event or experience. Meaning is defined in terms of the intentions and actions of a person (Peirce, 1963, p. 108).

Interpretation facilitates meaningful interactions. Blumer (1969) conceptualized meaning as a three-way interaction among (1) a person, (2) an object, event or process, and (3) the action taken toward that object, event, or process. He explained that interpretation allows human beings to perceive their world uniquely as they assess various kinds of interactions: "Human action is constructed by the actor on the basis of what he [sic] notes, interprets, and assesses; and the *interlinking* of such ongoing action constitutes organizations, institutions, and vast complexes of interdependent relations" (Blumer, 1969). Blumer also stressed that in a society, the personal-social relationship has symbolic, interactive and interpretative dimensions. The interpretation of symbolic interactions helps people (re)discover the taken-for-granted meanings subsumed in symbols, icons, and daily routines. Goffman (1981) and Garfinkel, Lynch, & Livingston (1981) discussed how the world in front of us can be read and interpreted in terms of the rituals and taken-for-granted meanings that are hidden in the interaction process

(Denzin, 1989). Rambo (1999) specified the mechanism through which the process of *meaning-making* occurs and the transactional nature of symbols:

> Interpretation [i.e., the getting of symbolic resources] and intention [i.e., the giving of symbolic resources] are symbolic control actions directed toward real instances of symbolization and a cultural pattern of possible instances. The control is exercised, in part, within transactions....Control is the contingent element of meaning, experienced as the necessity to exert effort in order to understand and be understood (p. 323).

Interpretation also provides the foundation for the *successful exchange of meanings*. Blumer (1969) explained that when confusion or misunderstanding occurs in personal interactions, "communication is ineffective, interaction is impeded, and the formation of joint action is blocked" (p. 9).

Interpretation brings out and clarifies embedded meanings. Ricoeur (1979) stated that interpretation can reveal the meaning embedded in a text or slice of interaction. Similarly, Van Manen (1990) stressed that deriving something of value from a text or a lived experience is a process of insightful intention, discovery or disclosure that requires interpreting meanings. The culture-centered approach toward meaning suggests that meanings are embedded in language and culture. Understanding is the process of comprehending what has been interpreted in a situation or text (Ricoeur, 1979). Denzin (1989) suggested that interpreting meaning leads to understanding. Van Manen (1990) argued that formulating *thematic understanding* is critical to the process of ordering embedded meanings into a cohesive framework. Developing a thematic understanding is not a rule-bound process, but a free act of "seeing" meaning (p. 79). In other words, to reach in-depth understanding individuals engage in highly personal cognitive, affective or intuitive efforts, or participate in efforts facilitated by others, that highlight the purpose or significance of the person, object, event or process. Sometimes, interpretation leads to a thematic understanding by providing "stepping stones" for individuals to remember, re-order,

and re-construct existing meanings, values, and experiences into a new cohesive framework (Cobb, 2000). When a thematic understanding occurs, persons connect with another dimension (intellectually or emotionally) by a bond of interdependence, causality, logical sequence, or coherence.

Interpretation operates at a personal level. Mead (1934) and Blumer (1969) stressed the steps that individuals take in "assigning meanings" both at the personal and interpersonal level. Blumer suggested that the process of assigning meaning begins as a *personal, internal interpretation process*. Specifically, meanings are dealt with, and modified through, an interpretative process within the person. Stryker (1995) identified this internal process of interpretation as the starting point in the formation of self and a social persona by stating:

> Persons have minds, and their minds have the potential of reflexivity; they are subjects who can take themselves as objects of their own reflection. When they do so, they create selves; self created as inherently social products, for persons reflect on themselves from the standpoint of others with whom they interact (p. 649).

Thus, Stryker echoed Peirce's (1964) perception that the process of assigning meanings has practical outcomes. That is, the process of assigning meanings "works" because it helps us deal with personal and interpersonal situations. Stryker concluded, "In ongoing interaction, meanings must be assigned, at least on a tentative basis, to the situation of interaction and its constituent features if the behavior of participants is to be organized" (Stryker, 1995, p. 649). Furthermore, interpreting is a "must," because when individuals confront the world, they should ideally *act* instead of *react*. That is, people should be prepared to act toward objects based upon the meaning the objects have for them (Blumer, 1969). To summarize, interpretation is a transactive, meaning-assigning process that can be considered as a "process of setting forth the meaning of an event or experience" in a social environment (Peirce, 1963, p. 108). For the

purpose of this research, interpretation as summarized above will be referred to subsequently as a "meaning-forming" process.

A slightly different perspective, proposed by group of psychologists, including Piaget, Norman, von Glasersfeld, and Vygotsky, highlights the idea of *routine recognition* in constructing and interpreting personalized meanings. They maintain that "people actively build or construct their knowledge of the world and of each other" and argue that human perception "involves processes of interpretation that may be very abbreviated in routine instances of recognition" (Cobb, 2000).

The Process of Interpretation in a Resource Management Context

The previous review of the nature of meanings and the meaning-forming process redirects attention to Tilden's thinking on meanings, interpretation and relationships. More than 40 years ago, after an extensive review of interpretive programs conducted at National Park sites nationwide, Freeman Tilden emphasized that the essence of interpretation is "to reveal meanings and relationships" (p. 8). He repeated this refrain four times in his rather short chapter "Principles of Interpretation" (Tilden, 1957, chap. 1). Tilden first emphasized that "naturalists, historians, archeologists, and other specialists are engaged in the work of revealing, to such visitors as desire the service, something of the beauty and wonder, the inspiration and spiritual meaning that lie behind what the visitor can with his [sic] senses perceive" (p. 4). Second, Tilden likened interpreters to "revealers—[they are] men and women who uncover something universal in the world that has always been here and that men have not known" (p. 5). The third time occurred when Tilden stated the definition of interpretation, namely, interpretation's aim is

"to reveal meanings and relationship" (p. 8). Finally, Tilden stressed that, "Interpretation is the revelation of a larger truth that lies behind any statement of fact" (p. 8).

Some interpretive researchers have also emphasized the meaning-revealing aspect of interpretation. For example, Alderson and Low (1985) proposed that "revealing meanings leads to deeper understanding." Similarly, Knudson et al. (1995) distinguished interpretation from traditional education and training and by stating that "[Interpretation] passes on the meaning of something and develops a deeper understanding" (p. 4). However, in the resource management profession, scholars have not fully addressed the relationship between interpretation, meanings and understanding. How does the process of revealing meanings lead to interpretation? Does interpretation lead to understanding? Does understanding lead to appreciation of the resource? In general, during recent decades, interpretation literature has not emphasized the importance of thematic understanding or the relationship between the concepts of meanings, interpretation, and connection.

Interpreters in the National Park Service have challenged themselves to better facilitate visitor connections to the meanings and significance inherent in the resource by seeking to improve their knowledge, skills, abilities, techniques, and overall performance. Since 1994, about 50 NPS interpreters who had experience and long-term involvement in the design and practice of interpretation began a quest for the professionalization of the field of interpretation (Larsen, 1998). Two hundred interpreters joined the journey as writers, reviewers, and instructors. In 1996, the Interpretive Development Program (IDP) was born. Since then, more than 2,000 career and volunteer interpreters from both NPS and non-NPS sites have been exposed to the IDP through training and supervisory channels (Larsen, 1998). The IDP emphasizes three philosophical tenets: (1) the resource possesses meanings and has relevance,

(2) visitors seek something of value for themselves, and (3) interpretation facilitates a connection between the meanings of the resource and the interests of the visitors (NPS, 1997b; 2000b). The IDP views meanings as inherent in the resource for two reasons: social consensus and the specific attributes of the resource (Larsen, 1997). The IDP also recognizes that visitors ascribe personalized meanings to the resource (NPS, 2000b). Thus, a resource represents layers of meanings, while humans bring various perspectives to the site. For the IDP, the chief goal for interpretation is to facilitate opportunities for the visitors to form their own intellectual and emotional connections with the meanings and significance inherent in the resource (NPS, 1997a; Kohen & Sikoryak, 1999).

Interpreters create opportunities for visitors to connect to resource meanings. In order for these opportunities to "work," the IDP emphasizes two premises: (1) visitor sovereignty and (2) universal concepts. The IDP realizes that unless the visitors first "care about" the resource so that they come to "care for" the resource, the future of the resource will be in jeopardy (Larsen, 1997; NPS, 2000b). Acknowledging the "rights" of visitors, the IDP emphasizes:

> The people get to choose! No matter how much *[the interpreters]* care, the visitor will ultimately decide whether the park is meaningful and worth preserving. [Interpreters] must meet the visitor on their terms... If you have helped people come to care about the place, they will see action should be taken to protect it... You have to earn the right to deliver that message. Earning it means meeting visitors where they are and helping them make personal connections to the resource (Larsen, 2001, pp. 4-5).

Goldman, Chen, & Larsen (2001) examined the meanings visitors attach to resources at the Lincoln Memorial, the Korean War Veterans Memorial and the Vietnam Wall. They highlighted the need for interpreters to better understand visitor meanings as a starting point for developing interpretive programs. By understanding visitor meanings, interpreter can better facilitate opportunities for intellectual and emotional connections to resource meanings and to the resource

itself: “Interpretive outcomes such as care and responsible citizenship do not arise out of a void, however; they require a sense of relationship, a sense of being connected to something that is bigger than oneself” (p. 4).

The IDP also recognizes that some interpretive programs are more successful than others at providing visitors with the opportunity to form their own connections to resource meanings. The most effective programs have one thing in common, they provide opportunities that develop a link between the tangible resource (i.e. person, place, object, event, or other concretely understood phenomena) and a *universal concept* (Larsen, 1997; NPS, 2000b). Universal concepts are ideas that are relevant to almost everyone, but usually do not mean the same thing to any two people (NPS, 2000b). Because they are broadly relevant, universal concepts increase the likelihood that visitors will be able to relate to or be interested in the meanings discussed. Larsen (2001) explained that universal concepts enhance opportunities for visitors to form intellectual and emotional connections with the meanings and significance inherent in the resource:

> Universal concepts like beauty, time, harmony, power, complexity, survival, sex, and change are powerful and [lie] at the very center of good natural history interpretation. A universal concept like family has a different meaning in cultural or historical contexts, but it allows humans to communicate about and explore those differences (p. 14).

Ham (1992) referred to these concepts as “highly personal things,” including “ourselves, our families, our health, our well-being, our quality of life, our deepest values, principles, beliefs and convictions” (p. 13). Universal concepts can be used to tap into the memories, values, and experiences that many visitors share (Schama, 1996; Silverman, 1997). Literature in both the sociological/philosophical and resource management traditions suggest that interpretation reveals and clarifies the meanings embedded in specific objects, events, ideas, places and processes. It

facilitates interactions and relationships. It is most powerful when it includes universal concepts; it is realized at the personal level. Connecting these diverse elements in interpretive theory development and in the development of interpretive products represents a formidable challenge.

The Framework of Meanings and Interpretation

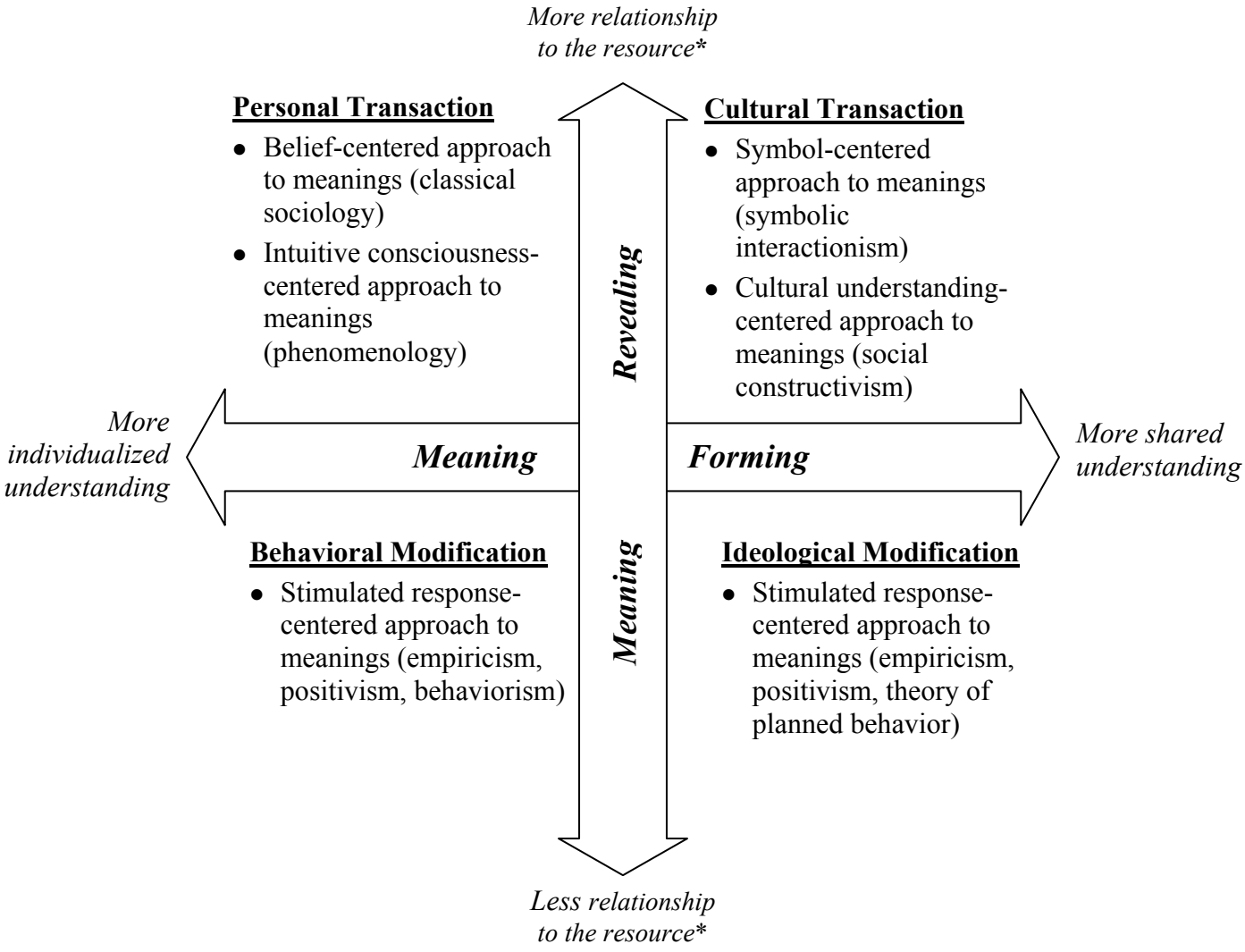
To build upon the ideas presented in the first section, if "meanings enable humans to overcome the painful gap between the subjective and objective worlds," as advocated in the belief-centered approach, then interpretation satisfies humans' need to create and sustain meanings as they experience a bewildering and, at times, seemingly purposeless world. The act of interpretation boosts the morale for those who decide to act upon social or environmental issues. If, on the other hand, meanings are embedded in symbols and can therefore easily be taken-for-granted, as emphasized by the symbol-centered approach, then interpretation clarifies the meanings represented by symbols, icons, and clichés. By doing so, interpretation allows individuals to discover or rediscover personalized meanings in symbols which are themselves subsumed by larger symbols. If, however, meanings are constructed out of one's experiences of personal and social development and are embedded in culture and language, as argued in the culture-centered approach, then interpretation helps people better communicate the meanings of their heritage. Furthermore, interpretation enables the audience to better understand the multiple meaning systems or points of view that are present in a multi-cultured society. If, on the other hand, meanings are embodied in nature and the chief human interests are to understand existence, to explore the role of intuitive consciousness in all spheres of life, and to understand and describe universal meanings, then interpretation enhances understanding and provides a mechanism to synthesize all the powers of the human psyche, including thinking, sensing,

feeling, intuiting, imaging, and remembering. If, however, meanings are measurable responses to stimuli that emerge in pursuit of rewards or the attempt to avoid punishment, as maintained by the response-centered approach, then interpretation primarily functions to enable social institutions or management agencies to change or manipulate audience perceptions, attitudes, and behaviors. Thus, if meanings are conceptualized as a continuum, then interpretation, which includes meeting-forming and meaning-revealing processes, must also be conceptualized as a continuum. Further, a continuum-based approach allows interpretation to be conceptualized in such a way as to reflect the scope and complexity of the concept of meanings. The presence (or possibility) of a conceptual continuum has likely contributed to the difficulty professional interpreters have had in reaching a consensus as to what interpretation is all about. As some interpreters have been known to lament: "The problem with interpretation is that there are too many interpretations of what interpretation is." Similarly, Patterson and Williams (1998) observed about natural resource management that, "As a discipline, we are largely uninformed about the philosophy of science." They responded to the challenge posed by Thomas Kuhn (1962) to examine the "paradigm" of scientific truth and the philosophy of science by examining the concepts of holistic inquiry and pluralism. Patterson and Williams proposed that a spectrum or a continuum exists, which they broadly labeled "interpretivism," that allows scholars to examine the practice of social science in natural resource management. A review of the literature relating to meanings and interpretation suggests that a parallel spectrum or continuum exists that relates less to the philosophy of science than the philosophy of meaning and meaning-forming and meaning-revealing processes.

The meaning/interpretation continuum that emerged out of this literature review and research process exists along two dimensions, that is, understanding and relationship. The first

dimension reflects two distinct outcomes of the meaning-forming process: a *personal* understanding of meanings and/or a *shared* understanding of meanings. Denzin (1989) specified two forms of understanding that emerge as an outcome of interpretation: emotional understanding and cognitive understanding. He stated, "Emotionality and shared experience provide the conditions for deep, authentic understanding" (p. 33). Cognitive understandings, on the other hand, "lay bare essential meanings of a phenomenon, but they do not infuse those meanings with emotion" (p. 33). The conceptual continuum of meanings and interpretation (Figure 1) developed in this study proposes that through the processes of ascribing, constructing, making, realizing or stimulating meanings, individuals form more personalized and/or more shared understanding. The second dimension maintains that the process of meaning-revealing deals with the mutual transactions between two or more parties, and has as a distinguishing feature the establishment of a relationship with the meanings of the resource being interpreted. Blumer (1969) explained that interpretation allows human beings to perceive their world uniquely as they assess the vast complexes of interdependent relations.

Figure 1. A Conceptual Continuum of Meanings and Interpretation



* For the purpose of this figure, the "resource" is conceptualized broadly as an object, event, person or place.

A Typology of Connections

This section discusses the understandings of the concept of connection in the socio-philosophical and resource management traditions. Linguistically, the word *connection* originated in the English term "connexion" indicating an action of binding together. The Oxford

English Dictionary (1989) defines a connection as "the condition of being related to something else by a bond of interdependence, causality, logical sequence, coherence, or the like; relation between things one of which is bound up with, or involved in, another" (Simpson & Weiner, 1989, p. 747). Socio-philosophical theorists approach the concept of connection by examining how cognitive and spatial elements are connected in the human mind (Downs & Stea, 1973; Kaplan, 1976; Moore & Golledge, 1976), how humans desire to interact and connect with the symbolic world (Berger, 1967; Ricoeur, 1974; Phillips, 1997; Rambo, 1999), and how the idea of connection relates to place attachment (including people's bonds to both the natural and built environments) and sense of place (Tuan, 1974; 1977; Field, 1995; Williams & Stewart, 1998). In debating the origin of hermeneutics, which is considered the theory and practice of interpretation, Ricoeur (1974) clarified that connections occur through a process of linking meanings in the mind of the actor. He further stressed that interpretation concerns "the law of internal textual connection [that links meanings to context, including] geographic, ethnic, and social environments" (p. 5). In addition, Ricoeur made clear that an interpretive connection deals with "the problem of the relationship between…life as the bearer of meaning and the mind as capable of linking meanings into a coherent series" (p. 5). Thus, Ricoeur highlighted that connections represent a potential conflict between the breadth and depth of meanings that life presents to an individual, and the individual's ability to order these meanings into a coherent whole. Maslow (1964), on the other hand, views connections as a highly positive experience that links people to phenomena such as nature and history. Maslow's concept of "peak experience" reflects a type of personal connection with the meanings of the resource. "These highly satisfying, usually joyful events often come from feeling at one with nature or from seeming to be transported back in history as if a participant in a different time" (Maslow, 1964, p. 63).

In the resource management tradition, scholars and practitioners have long recognized the importance of audience connecting to resource meanings (Lewis, 1980; Grinder & McCoy, 1985; Ham, 1992; Knudson et al., 1995; Strauss, 1996). The National Park Service describes a connection as (a) "linkages" and "relationships" that are "broad based and accessible both intellectually and emotionally" (Larsen, 1997; NPS, 1997b; NPS, 2000b) and (b) as the linkages that visitor forge with the resource when they "develop an active stewardship ethic" (NPS, 2000b). The IDP views interpretive programs as "a catalyst in creating an opportunity for the audience to form their own intellectual and emotional connections with meanings/significance inherent in the resource" (NPS, 1997a). Understanding that connections can only be realized *by the visitor*, the IDP identifies strategies for how *opportunities for connections* can be developed in interpretive programs (Larsen, 2002; NPS, 2002b). The more recently developed "Analysis Model" indicates that opportunities for visitors to connect to resource meanings can be provided through the development of "tangible/intangible links." An "intangible" is an idea, event, system, or process including those broadly relevant ideas that have been designated as "universal concepts." The IDP explains how interpreters can provide opportunities for intellectual and emotional connections to resource meanings by linking the tangible resource with its intangible meanings using various methods:

> Tangible/intangible links are the foundational elements of any interpretive product. All other interpretive elements are built from them…There are many ways a tangible/intangible link can be developed into an opportunity for an emotional or intellectual connection to the meanings of the resource…The commonality provides a foundation for a conversation about the content and effect of the product as well as greater understanding and appreciation…Stories, explanation, examples, presentation of evidence, quotes, analogies, comparison (i.e. past vs present), illustrations, sequences of questions, demonstrations, activities, and discussions are just some methods an interpretive product might use (NPS, 2002b).

Larsen (2002) further indicated that "These opportunities are offerings that the visitor may add to, subtract from, transform, and make their own…When an interpretive experience successfully facilitates personal connections to the meanings of the resource, the audience forms a personal bond with the resource—its meanings act upon them and they come to value the resource more" (p. 25).

The literature from social-philosophical theories provides further discussion about the types of connections people experience as they interact with their world. Four categories of connections can be identified, each reflects a different position vis-à-vis understanding and relationship. The four categories include: personal transaction, cultural transaction, ideological modification, and behavioral modification. Table 2 identifies the types of connections associated with each of the four categories and a bulleted description of each of the categories and types, and associated references. Note: not all of the categories and types identified by theorists are considered to be *meaningful interpretive connections* by the National Park Service.

Table 2. A Typology of Connections

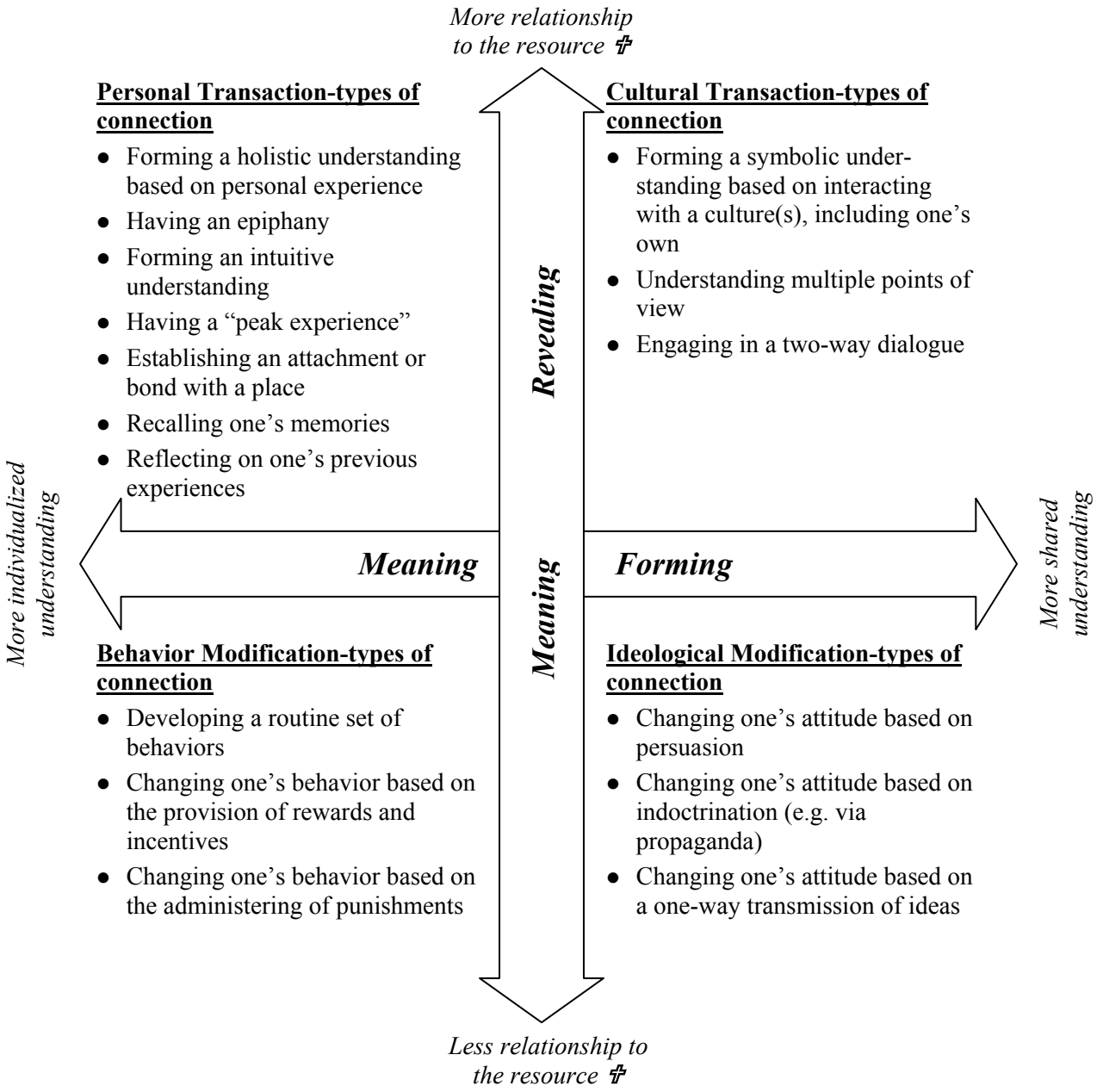
Connection Categories & Types	**Category & Type Descriptions**	**References**
Personal Transaction: ● Forming a holistic understanding based on personal experience ● Having an epiphany ● Having a "peak experience" ● Forming an intuitive understanding ● Establishing an attachment or bond with a place ● Reflecting on one's previous experiences ● Recalling one's memories	● Emphasis on *individualized* meanings and more relationship with the meanings of the resource ● Result of an enriched human mind ● Sometimes a life-changing experience ● Sometimes a delightful or magical moment from life	Maslow, 1964; Denzin, 1989; Knudson et al., 1995; Strauss, 1996,
Cultural Transaction:	● Emphasis on *shared* meanings and more	Lewis, 1980;

• Forming a symbolic understanding based on interacting with a culture(s), including one's own • Understanding multiple points of view • Engaging in a two-way dialogue	relationship with the meanings of the resource • Something between past and present, of relevancy • An understanding of the history and significance of events, people, and objects with which a site is associated • Inspired understanding and care for the forest and management issues	Alderson & Low, 1985; NPS, 1997a; Grinder & McCoy, 1985; Knudson et al., 1995; Rounds, 1999 (Larsen, 1997; NPS-IDP, 1997b; 2000; 2002a)
Ideological Modification: • Changing one's attitude based on persuasion • Changing one's attitude based on propaganda • Changing one's attitude based on one-way transmission of ideas • Becoming culturally assimilated/learned	• Emphasis on shared meanings and *less* relationship with the meanings of the resource • Familiarity allows the human brain to expend less effort to concentrate on personal and meaningful content	Moray, 1959; Cherry, 1966; Ham, 1992
Behavioral Modification: • Developing a routine set of behaviors • Changing one's behavior based on the provision of rewards and incentives • Changing one's behavior based on the administering of punishments	• Slightly emphasis on individualized meanings and less relationship with the resource • A changed behavior based on modification • No emphasis on individualized meanings and less interpretation efforts	Skinner, 1974

The conceptual framework presented in Figure 2 links meanings, interpretation, and connection. It builds upon the conceptual continuum presented in Figure 1 (p. 31) by identifying the types of connections that individuals form with the meanings of the resource. The x-axis represents two endpoints of the meaning-forming process: more individualized understanding or more shared understanding. In the previous section, several approaches to the concept of meanings are discussed. Some approaches view meanings as more individual-oriented (i.e. meanings as subjective beliefs, meanings as stimulated-responses, and meanings as intuitive

consciousness) and other approaches emphasize the shared understanding or cultural-driven aspect of meanings (i.e. meanings as transcendent symbols and meanings as cultural understandings). The y-axis represents two endpoints of the meaning-revealing process: more relationship to the resource or less relationship to the resource. The meaning-revealing process, as envisioned in this framework, can be carried out by an individual themselves, a professional interpreter, or any of a variety of other communication channels.

Figure 2. A Conceptual Framework of Meanings, Interpretation and Connections



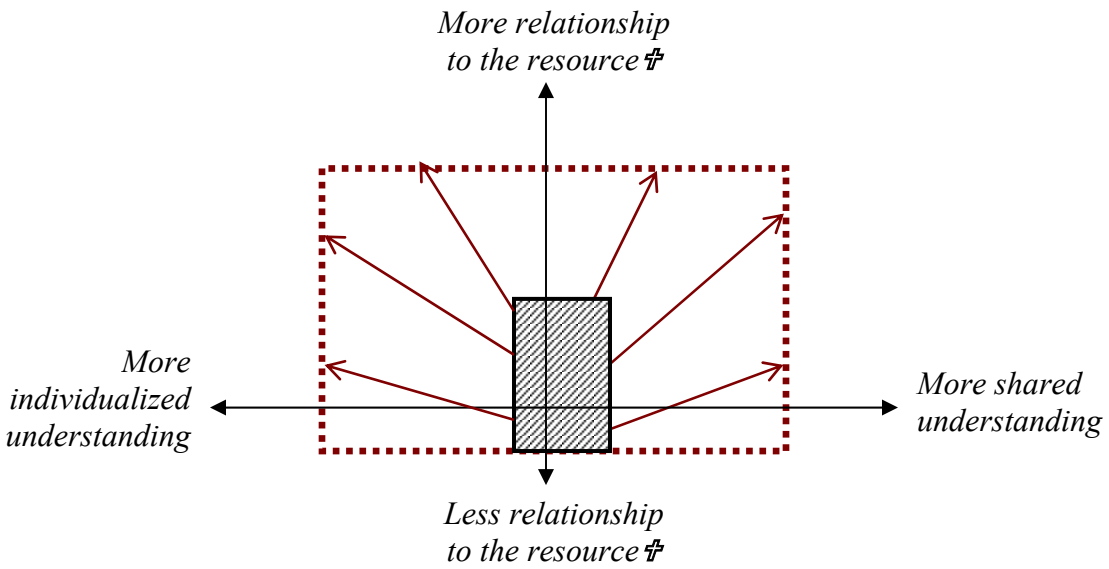
✠ For the purpose of this framework, the "resource" is conceptualized broadly as an object, event, person or place.

The Desired Outcome of an Opportunity for Intellectual or Emotional Connections to Resource Meanings

An interpretive connection moves an individual from an initial starting point toward more relationship with the resource and more thematic understanding (of an individualized or a shared nature) (Figure 3). The catalyst for this shift toward more relationship and more understanding is often an individual's encounter with the meaning-revealing aspects of an interpretive program or product. Knudson and colleagues (1995) suggested that a connection experience represents a dramatic shift in terms of how people respond emotionally and intellectually to the resource:

> [After an interpretive experience, people see] their campground, the lake and surrounding woods in a new light. Or people visit an old house or capitol building or factory with little more than mild curiosity; they leave it with a new world open to them, having shared physically, emotionally, and intellectually in the story of the place and its significance to their lives (Knudson et al., 1995, p. 7).

Figure 3. Desired Outcome for Visitors Exposed to Interpretive programs as A Function of Change in Two Dimensions: Understanding and Relationship



▨ Indicates a hypothetical starting point for a visitor to an interpretive program

✠ For the purpose of this figure, the "resource" is conceptualized broadly as an object, event, person or place.

More relationship to the resource and more thematic understanding is only possible if the visitor forms a connection or series of connections to the meanings/significance inherent in the resource. Interpretation facilitates these connections by providing opportunities for visitors to access resource meanings that are broadly relevant and reflect multiple points of view. One of the previous NPS directors, George B. Hartzog (1974) highlighted,

> We who have spent our lives working in and for the parks should not expect other people to possess an instinctive knowledge of park values....A sensitive enjoyment and understanding of national parks does not come naturally to most persons. The majority requires assistance, educational and interpretive programs, and the opportunity for frequent visits (Hartzog, 1974).

By forming a connection to resource meanings, visitor gain understanding, relationship, and contiguity. Some psychologists suggest that a sense of contiguity will occur when two objects or events touch in time and space (Greene, 1996). Meanwhile, sociologists emphasize that a sense of being related serves as the foundation for a long-term relationship (Bolton, 1958; Greene, 1996). Shroeder (1990) equated "spiritual" experience with feeling "relating to or in touch with an 'other' that transcend one's individual sense of self and gives meaning to one's life at a deeper than intellectual level" (p. 25). The IDP proposes that the outcome of an interpretive opportunity is understanding, stewardship and care:

> Interpretation is a guide, leading from physical resources to their underlying meanings, from the tangible to the intangible, from sight to insight. By providing opportunities to connect to the meanings of resources, interpretation provokes the public's participation in resource stewardship, helping them to understand their relationships to and impacts upon those resources—helping [visitors] to care (NPS, 1997b).

CHAPTER THREE

METHODS

The study recognizes that the philosophy of science spans a continuum proposed by Kuhn (1962) and discussed by Laudan (1984), Anderson, (1986), Creswell, (1994), and Patterson and Williams (1998). They suggested that it is possible to better understand scientific inquiry (i.e., the nature of reality, the nature of human experience, and the nature of scientific inquiry) by examining three areas of philosophical inquiry: ontology, epistemology, and axiology (Table 3). The methodological approaches incorporated in this study reflected paradigms relating to the nature of interpretation. Sections presented in this chapter include: study objectives and design, method description, data collection and analysis strategies, and advantages and disadvantages of the methods. Additional subsections presented the following issues: description of the population, sampling procedures and sample size, data collection methods, the instruments and their validity and reliability, and a brief description of potential challenges that may affect research results. Methodological terminology used throughout this chapter reflects the philosophical and sociological traditions discussed in Van Manen (1990) and Sommer & Sommer (1997).

The nature of scientific inquiry is complex and is often overlooked. Patterson and Williams (1998) outlined key considerations for researchers addressing complex phenomenon (Table 3). An ontological question asks, "What is the nature of reality?" (Creswell, 1994). Generally speaking, interpretation is a basic and universal human activity (Zeedani, 1982). Specifically, interpretive programs are constructed by the interpreters to facilitate opportunities for intellectual and emotional connections with the meanings and significance inherent in the

resource (NPS, 1997a). In addition, persons who attend interpretive programs by listening, reading, or active participation ascribe meanings to site resources and have a strong sense of what constitutes a quality interpretive experience (Goldman et al., 2001). The Interpretive Development Program of the National Park Service has pursued the challenging task of developing and maintaining a service-wide standard that will increase the likelihood of successful interpretive outcomes (NPS, 1997b). This study acknowledged a narrative, constructive, meaning-based ontology. Such ontology asserts that human experience (i.e. the construction of interpretive opportunities and the realization of interpretive outcomes) is more like an emergent narrative than a result of predictable variables. Epistemological concerns focus on the relationship between the researchers and phenomenon observed, the research process, and type of knowledge generated (Patterson & Williams, 1998). This study maintained a more detached relationship with the phenomenon observed in that the researcher did not participate or directly observe the development of interpretive products, nor did the researcher measure the realization of interpretive connections among visitors. In addition, the study employed the hermeneutic circle as a method to understand knowledge that is contextual. An axiological approach asks questions regarding the roles of scientific inquiry. The study aimed to identify and understand the spectrum of interpretive connections.

Table 3. Examples of Different Types of Normative Commitments which underlie Scientific Paradigms (from Patterson & Williams, 1998)

Commitments	Examples
Ontological	
1. Nature of reality	Objective ontologies: Maintain the existence of a single, freestanding reality waiting to be discovered (Howard, 1991).
	Constructivist ontologies: Maintain that humans actively construct identities, reality, and knowledge (Howard, 1991; Nespor & Barylske, 1991).
2. Nature of human experience	Deterministic ontologies: Philosophies that view psychological functioning (e.g., satisfaction, aesthetic response, and behavior) as outcome variables dependent on or caused by isolatable environmental and personal variables (Anderson, 1986; Hudson & Ozanne, 1998).
	Narrative Ontologies: Philosophies that assert human experience is more like an emergent narrative than an outcome predictable on the basis of isolatable antecedent environmental and personal variables (Arnould & Price, 1993).
3. Human nature	Information based models of human nature: Those models of human behavior that treat individuals as rational, analytic, goal-driven information processors.
	Meaning-based models of human nature: Those models of human behavior which portray individuals as actively engaged in the construction of meaning as opposed to processing information that exists in the environment (Mick & Buhl, 1992).
Epistemological	
1. Relationship between researcher and phenomenon observed	Dualism: The researcher is detached and separate from (has no influence on) the phenomenon observed; scientific observation is an act of description.
	Fusion of horizon: Observer is not separate from the phenomenon; observation is an interpretive act, observer therefore coproduces rather than describe knowledge.
2. Research process and type of knowledge generated	Linear process: Yield the answer, usually in the form of universal or generalizable laws.
	Hermeneutic circle: May express the understanding at the moment—this understanding is subject to revision; knowledge is contextual and time bound.
Axiological	The ultimate aims of science verses the criteria by which research is evaluated as an acceptable or unacceptable scientific product in a peer review process.
1. Terminal goals	"Positivist" paradigms: Explanation, prediction, control.
	"Interpretivist" paradigms: Understanding, communication.
2. Instrumental goals	"Foundationalist" criteria: Internal consistency reliability, generalizability, discriminant validity, convergent validity.
	"Antifoundationalist" criteria: Persuasiveness, insightfulness, use in future research.

Study Objectives

This study investigated the little-understood phenomena of how opportunities for intellectual and emotional connections between the resource and the visitor were structured and facilitated by interpreters. Additionally, the researcher anticipated documenting how these facilitated connections were identified or recognized by the Interpretive Development Program's certifiers. Specifically, the study objectives were to:

1. Systematically review the concept of meanings as understood within sociological and philosophical traditions.

2. Identify the types and characteristics of opportunities for intellectual and emotional connections to resource meanings in products submitted for review. Examine how the developed opportunities for connections to resource meanings differ subcutaneously from those not fully developed ones.

3. Thoroughly examine the implications of providing interpretive connection opportunities in training, planning, and in a resource management context.

Study Design

Multimethod Approaches

The researcher employed a *multimethod* approach throughout the study phases. A multimethod approach provides flexibility in dealing with complex phenomenon (Sommer & Sommer, 1997; Van Manen, 1990). Several methodological approaches were incorporated including library research, archival study, qualitative evaluation and hand-coding, and quantitative analysis. Descriptions of the proposed methods are presented as follows.

Library Research

A library search enables the researcher to learn existing knowledge from philosophical and theoretical points of view, discover new ideas and methods that will enhance the study, and determine source credibility through the review of primary and secondary sources (Sommer &

Sommer, 1997). The researcher conducted a comprehensive review of theoretical literature on the phenomena of meanings, interpretation and connection and the Interpretive Development Program through library research. Review topics included the nature of meaning, a general description of various approaches as to how meanings are revealed and formed, the characteristics of interpretation, and types and attributes of connections.

Research on the development of the IDP summarized how the idea of a professional standard in interpretation developed over time, spanning from the early development of the program and current implementation to the visions of the IDP. The result of this submission-certification process was outlined in Appendix A.

Obtaining Permission

The researcher has made every effort to understand the sensitivity and possible implications of this study to the National Park Service interpreters. The study sought to maintain a respectful relationship with the Interpretive Development Program, leaders, and participants. In addition, the researcher was aware of the need to thoughtfully communicate with the IDP managers regarding some of the sensitive logistics. During this process, the researcher (1) composed a cover letter (Appendix B) to potential study participants (in this case, those interpreters who submit programs for IDP certification), (2) designed a consent form for interpreters to give permission (Appendix C), and (3) produced a "Why Study the Opportunities for Intellectual and Emotional Connections?" pamphlet to be mailed with consent form (Appendix D). The researcher worked with IDP managers and several interpreters to review the two documents and make adjustments. This step allowed the IDP mangers to clearly understand the purpose of the study, to have input into study implementation, and to strengthen their ability to communicate with field interpreters and interpretive supervisors if questions arise.

Qualitative Evaluation and Hand Coding

As noted in the research background section, a peer review certification process is a significant part of the Interpretive Development Program. This process starts when an interpreter decides to submit a product for certification in one of the ten competencies ranging from an interpretive talk, demonstration, writing, and media project, to interpretive research (Appendix E). Typically, interpreters invest several months of their time to develop a program. They have their supervisors coach them in the process. Finally, they submit their products for review. Once a submitted interpretive "product" arrives at the Mather Training Center for review, it will be duplicated, and then sent to two IDP certifiers. The two IDP certifiers will each review the product, discuss the product with their partner certifier via phone, and determine whether the product successfully *demonstrates* certification standards (meaning the product "passes") or *approaches* certification standards (meaning the product does not pass). The certifiers then provide written comments for the submitter, explaining their decision, identifying elements of success, and offering suggestions for improvement.

Two IDP competencies, Module 103 (Preparing and Presenting an Interpretive Talk) and Module 230 (Effective Interpretive Writing) were selected for review. There were three reasons for this choice. First, Module 103 is a foundational entry-level competency. All other modules extend the core elements of Module 103 (NPS, 1997b) into other types of interpretive products. Many IDP participants choose to first submit this competency and then move on to more advanced competencies. Secondly, Module 230 is an advanced level competency which requires the submitter to demonstrate a more comprehensive level of knowledge, skills, and performance of interpretation (Appendix E). Moreover, these two modules emphasize verbal or written content, rather than graphic content. The certification standards for the two modules are also

highly consistent. These characteristics allowed the researcher to conduct the data analysis more efficiently and effectively. Once permission was received from product submitters, the researcher reviewed and transcribed interpretive talks (Module 103 submissions) from a verbal to a written format. Many interpretive writing (Module 230) submissions came in an electronic format and thus did not require transcription. In several cases, the researcher first received writing submissions in a hard copy format and then prepared them into an electronic format for analysis.

The researcher incorporated hand-coding to identify themes, compared and contrasted distinct patterns among programs, and examined key elements among the data. An *inductive analysis* (Patton, 1987) was conducted to examine the "patterns, themes and categories" of the opportunities developed or undeveloped in the products reviewed.

DATE COLLECTION PROCEDURES

Unit of Analysis

Thomas Kuhn (1962) emphasized the concept of "unit of analysis" in his book on scientific inquiry. He explained the need to examine the nature and scope of the study objectives to determine the unit of analysis rather than to be limited to the traditional way of thinking (i.e. one participant equals one data entry). The significance of the "unit of analysis" in qualitative research includes, (1) linking specific theoretical propositions, (2) providing the means for generalizing results, and (3) anchoring elements for theory building (Yin, 1993). Since interpretive products (talks and writings) are constructed with the intention to provide a series of opportunities for intellectual and emotional connections to resource meanings, it is necessary to treat data in units that represent the natural "population" that is being studied. Thus, a unit of

analysis in this study was defined as *a section of an interpretive product that is identified by the certifiers or the researcher to provide opportunities for intellectual and emotional connections with the meanings and significance inherent in the resource*. Therefore, the sample size of the study did not equal the total number of programs submitted, but rather the total number of opportunities for intellectual and emotional connections to resource meanings identified by the certifiers and researcher.

Sampling

Sommer & Sommer (1997) provided several factors for social scientists to consider when deciding upon the sample size. These factors include (1) size of the population, (2) available resources and time constraints, (3) strength of the effect, (4) number of analyses to be performed, and (5) refusal and spoilage rates. A brief description of the sampling procedure is described below:

Step 1: The researcher automatically selected every interpretive talk or writing product submitted during July to November of 2001. (Each interpretive talk lasts from 10 to 40 minutes; the length of interpretive writing ranges from about 400 to 2000 words). The July to November time period was selected because this is when the majority of interpretive products are submitted for review each year.

Step 2: The researcher mailed a cover letter with a consent form and a promotion pamphlet to each submitter to acquire permission and compiled interpretive products for which signed consent forms had been returned indicating interpreter agreement to participate in the study.

Step 3: The researcher reviewed interpretive talk video, noted video length, and prepared electronic files of interpretive writing submitted for review.

Step 4: Once certifiers' review comments for the interpretive product were available, the researcher prepared these materials as content-analysis ready electronic files.

Step 5: The researcher examined the certifier comments to determine units of analysis and total sample size.

Data Analysis

Since this study investigated the little-understood phenomena of how opportunities for the visitor to form their own intellectual and emotional connections with the meanings of the resource created by the interpreters, the researcher used qualitative analysis to identify elements that shape those opportunities in the interpretive products collected.

Before data analysis and interpretation, a data reduction procedure was used to reduce the sheer amount of data size. Krueger (1994) identified a *tape-based analysis* strategy for audiovisual data derived from qualitative methods such as focus group interview tapes and ethnographic field notes. Since a word-for-word transcription of a 2-hour interview/program can yield up to 70 pages of text and since the total length of the interpretive talk programs were recorded on a total of six VHS tapes, this study could have generated 420 single-sided pages of program transcripts alone. In addition to interpretive talk transcripts, the data included 40 pages of interpretive writings and 61 pages of certifier comments. Thus, data reduction was important consideration.

The data reduction was based on the following criteria: audio recording quality, program length, and cross-rating of opportunities for connections. Two of the interpretive programs collected had poor audio quality which made the word-for-word transcription nearly impossible. In those cases, notes were taken by the researcher for data preparation. In addition, a rating system was developed to compare researcher's viewing notes with certifiers' comments to determine whether the opportunities for intellectual and emotional connections was high, intermediate, or low in the product reviewed. As a result, twelve products (half of interpretive talks collected) with high ratings and a total program length of less than forty minutes were

transcribed verbatim. The other twelve interpretive talks were reviewed and research notes were taken and included in the qualitative analysis.

Advantages, Disadvantages, & Validity of the Study

Van Manen (1990) stated that qualitative investigation, with its emphasis on a more holistic approach, is well suited for locating the *meanings* people place on the events, processes, and structures of their lives. Miles and Huberman (1994) addressed multiple techniques that researchers could employ for connecting these meanings to the *social world* around them. By employing a multimethod approach, the researcher sought to better understand the phenomena of interpretive connection while maintaining study validity and reliability.

CHAPTER FOUR

RESULTS

INTERPRETIVE PRODUCT CHARACTERISTICS

A total of forty-nine interpretive products were collected. Of those products, half were interpretive talks (n=24) and half were interpretive writing examples (n=25). Total length of all the interpretive talks combined was 610 minutes while about half of the programs lasted in the half-hour range. The text of the interpretive writing included more than 20,000 words. The total number of units of analysis among the interpretive products collected was 197. A unit of analysis was identified as an opportunity for intellectual or emotional connection composed of a tangible-intangible link developed with an identifiable method. The following excerpts give examples of what a unit of analysis might look like:

> Although most visitors are very careful to follow the rules established to protect this treasure for future generations, some actions still occur that permanently scar the cave for all of us and upset its native ecosystem. Often visitors who step off the trail to get a picture or to climb a boulder do not realize that they are tracking dirt onto formations that may become encased in the rock and never be able to be removed. [Cave] popcorn that may have taken thousands of years to grow also crumbles easily underfoot. In fact, even one touch to a formation near the trail leaves a microscopic residue of hand oil that, if repeated by other visitors, will cause the formation to stop growing, as well as leave a host of non-native germs, food particles, and bacteria behind. And visitors who break formations as souvenirs do not realize that the cave loses hundreds, probably thousands of formations this way each year—and if each of our almost 37 million visitors had also done so, their would literally be no cave formations left to admire (Product 1854).

> Interpretations of the celestial bodies varied widely among cultures, but often the sky was considered the abode of gods, a place humans could never touch. How do we know that sky watching was important to people of the past? Folk stories, myth, elaborate rituals and festivals, dances and costumes, and complex and symbolic architecture survive today. Astronomers today ask the same questions posed millennia ago by people sitting around a campfire at night. Those people

> wondered about the meaning of the flickering but eternal stars overhead and the fragile transient life around them (Product 1880).

Product Topic Diversity

Interpretive products covered a wide range of topics. Generally speaking, more than half (55%) of the products presented topics related to natural resources including wilderness, ecosystems, plant and wildlife species, and astronomy. About 43% of the products focused on the topics surrounding cultural or historic events, figures, or places. Of the 49 products, two were categorized into the "other" category. One of these products discussed the idea and practice of preservation in the National Park Service system and the other provided information regarding recreation opportunities. Table 4 captures the range of program topics analyzed in this study.

Table 4 also presents the numbers of units of analysis in each topic category. If an opportunity provided both intellectual and emotional connections with resource meanings, it was counted individually in each category. The results found that across all topic categories, products generally contained more opportunities for intellectual connections. An exception was the wilderness experience topic category. A general observation noted during the coding process was that when it was more likely for an opportunity to be identified as primarily functioning as a catalyst for an intellectual connection, frequently it also be identified as an opportunity for an emotional connection. And yet, when it was more likely for an opportunity to be identified as a catalyst for an emotional connection, that opportunity tended to function solely for an emotional connection.

Table 4. Product Topics, Program Content, and Units of Analysis

Product Topics [a]	**Product Content Description**	**Unit of Analysis** [b]	
		OI [c]	**OE** [d]
Wilderness Experience (n=5)	● Describes in great detail a wilderness scene or "function," including: landscape, viewshed, soundscape, web of life, presence of wildlife (especially birds and mammals) ● Emphasizes a sense of timelessness ● Sometimes products were presented as a first person "journey" which recorded the experience during a wilderness expedition	14	16
A "famous" animal or plant species (n=8)	● Focuses on the unique features of a famous or popular species ● Discusses the reasons (or misconceptions) that make the species famous ● Sometimes examines how humans rely on that species ● Often discusses the myths people have towards that species and helps lead the visitor to "solve the mystery" ● Often provides safety tips to negotiate the "danger" associated with encountering the species	22	12
Natural Phenomenon (n=10)	● Describes the inter-relatedness, interdependence, or mutual relationships of natural forces, functions, or phenomena ● Reflective; often reveals the ideas of "beauty" and "grace" ● Sometimes leaves the reader/viewer wondering "so what?" due to the lack of the cohesive development of an idea	25	18
Critical Resource Issues/Resource Preservation (n=2)	● Identifies causes and effects, also presents evidence ● Discusses scientific research results, and then urges action ● Sometimes relates to global issues such as global warming, biodiversity, urbanization, or light pollution	5	3
Nature-Human Interactions (n=2) [e]	● Presents the "typical" events of the exploration of the American West ● Discusses scientific activities ● Observes and describes wildlife	1	1
Cultural & Historical Resources (n=8)	● Examines historic artifacts (as the tangible resource) and verbally illustrates/recreates a period scene or how the artifact worked ● Explains in detail the "symbolic" meanings of artifacts often through a series of questions aimed at making the artifact relevant and encourage a higher level of ideas	25	15
Historical Figure(s) (n=5)	● Has the tendency to be chronological, following a "fact-fact-statement" format ● Often struggles to move to higher level concepts rather than just presenting the "obvious" or "taken-for-granted" meanings of the person(s) ● Are commonly presented along with significant historical event(s)	5	4

Historical Event(s) (n=6)	● Has the tendency to be chronological (at year xxxx, someone did something and its consequences) ● Presents the simple causes and effects of an historic event; sometimes follows a fact-fact-statement format ● Tends to lack multiple points of view/perspectives (i.e. what did the people then (and now) think about them, did they do anything different to change/improve the situation?) ● "Successful" products tend to be idea/topic driven, often making use of scientific methods to move to higher level concepts ● In some cases, the products are presented chronologically, however, they develop orderly connections between successive events or the parts of an argument or discourse	10	10
A "Sense of Place" (n=1) [e]	● Presents a "nostalgic" atmosphere ● Emphasizes the sense of community, urban gathering places, and cherished places	3	2
Public Relations & the NPS Mission (n=1) [e]	● Aims to communicate the mission of the National Park Service ● Enhances public understanding of the purposes and values of the NPS or the park unit ● Sometimes refers to the actual content of the Wilderness Act	2	1
Recreation Opportunities (n=1) [e]	● Describes the kinds of activities in which visitors could participate or the scenes that visitors could see ● Also advises the types of equipment visitors should bring and broadcasts the road condition ● A strong focus on hospitality and invitation of a pleasant atmosphere	2	1
11 Types of Program Topics (N=49)		**114**	**83**

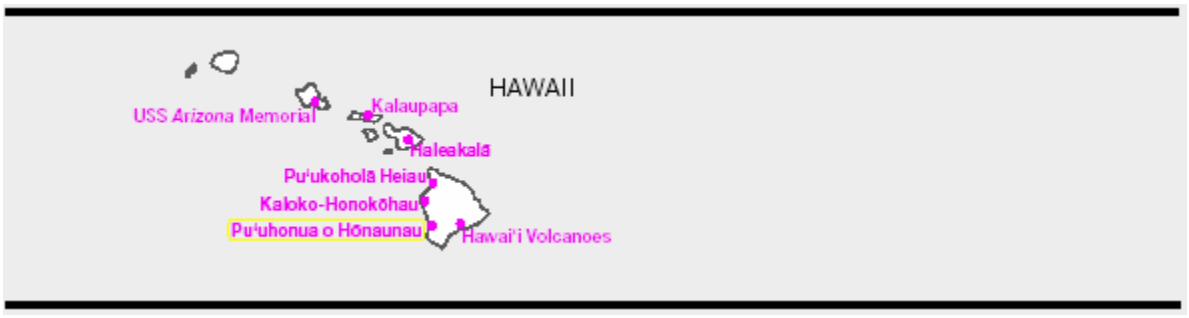
[a] *Several programs had two inter-related topics. In those cases, the topic category was identified as the topic with the most amount of content or time distributed to that topic area.*
[b] *A unit of analysis is defined as an opportunity0 for an intellectual or emotional connection with resource meanings provided in the products.*
[c] *OI indicates opportunities for intellectual connections with resource meanings in the products.*
[d] *OE indicates opportunities for emotional connections with resource meanings in the products.*
[e] *Sample is too small to provide sufficient descriptions of the program content like other categories.*

Product Geographic Distribution

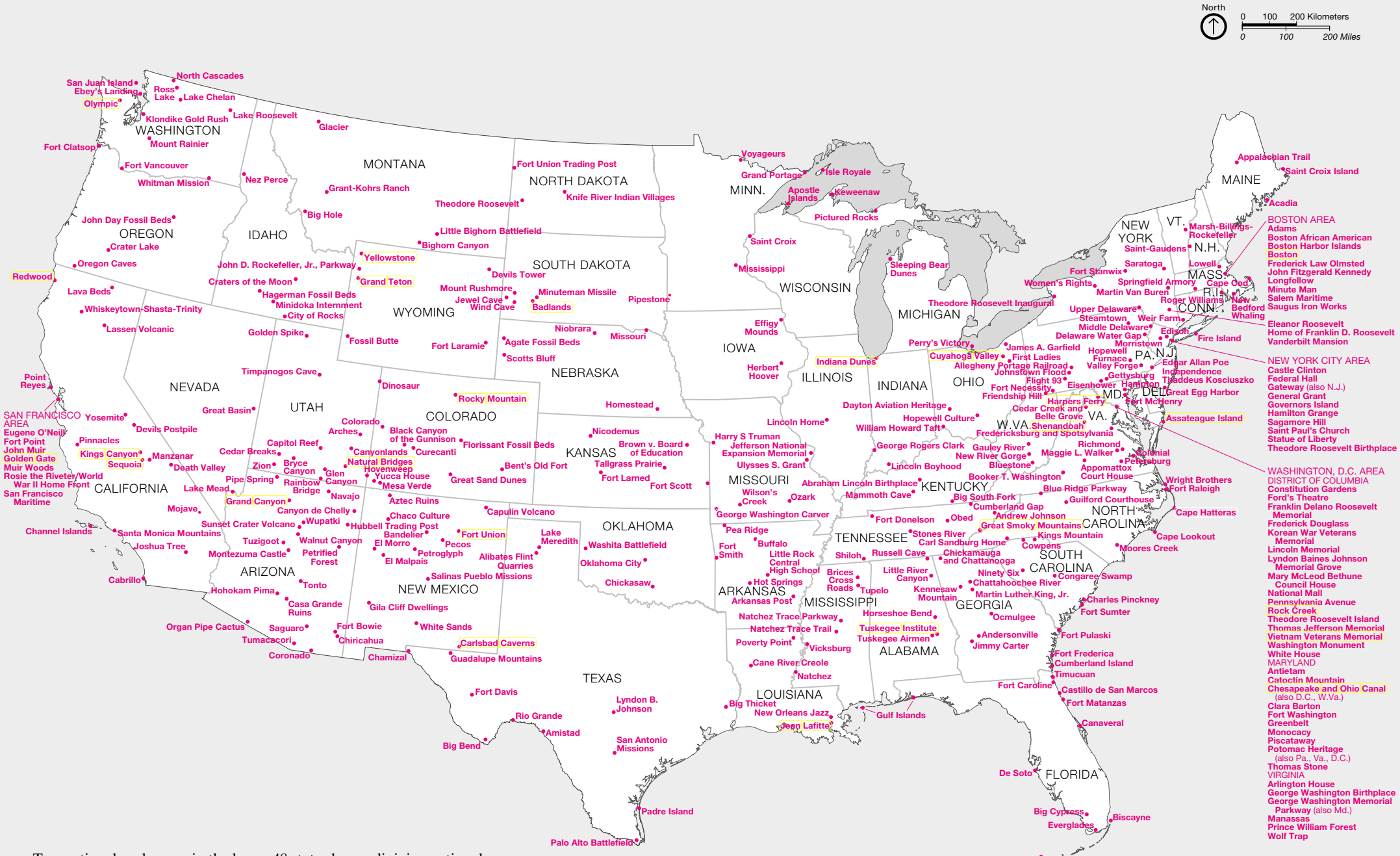
The interpretive products collected were delivered in six of the seven National Park Service regions (the Alaska Region was not represented in the products reviewed) (Figure 4).

Products came from a variety of different NPS park types including national park, national seashore, national lakeshore, national monument, national historical park, and national recreation area.

Figure 4. Interpretive Product Geographic Distribution (Maps Courtesy of Harpers Ferry Center, NPS)



(Continued)



Two national park areas in the lower 48 states have adjoining national preserves that are separate units of the National Park System but managed jointly. They are: Great Sand Dunes and Craters of the Moon.

Opportunities for Intellectual and Emotional Connections with Resource Meanings

Data analysis results revealed the methods and techniques interpreters used to develop opportunities for connections to resource meanings. The results also identified strategies interpreters used to match resource meanings with a range of visitor perspectives toward the resource. In addition, the results examined two characteristics exhibited by tangible-intangible links that were not fully developed.

Fully Developed Opportunities for Connections with Resource Meanings

The most basic attribute observed in connection opportunities that were fully developed was that they linked a tangible resource to its intangible meanings by using one or more methods or techniques. This principle was observed in every opportunity for connection, although the meanings of the resource and the methods used in developing those opportunities differed greatly across interpretive products. The different ways of developing connection opportunities were classified into four interpretive strategies: (1) Developing unexpected links, (2) Unlocking the layers of meanings embedded in a symbol, (3) Deconstructing myths, and (4) Using word pictures to create a holistic experience and/or understanding.

First Interpretive Strategy: Developing Unexpected Links

The first interpretive strategy developed an unexpected link between the tangible resource and its intangible meanings to provide opportunities for connections to resource meanings. By selecting a tangible resource that was further removed from the "big" idea(s) of the resource and developing a link with methods such as explanation and discussion, opportunities were provided for intellectual connections such as insights, understanding of context, and a sense

of relevance. Explanation appeared to play a major role in developing an unexpected link. Explanation made clear the cause, origin, or reason why those particular features or attributes had any significance with the tangible resource. Explaining the inter-relatedness of the tangible resource and its meanings also unfolded a relationship that may or may not be conceived by the audience as naturally existing between the two. Consider the following excerpt:

> The lock gates get all the glory. No one pays attention to the snubbing post standing silently beside the lock. The snubbing post offers quiet testimony to the struggle to survive on the canal.
>
> Raising and lowering the boats in the lift lock was the most dangerous part of the voyage. Locking through required trust. Canalers had to trust their equipment, as well as their coworkers in order to safely navigate a lock. To reach Georgetown from Cumberland a boat had to pass through 74 lift locks, 74 opportunities for disaster.
>
> The snubbing post was part of an ancient safety system employed by canalers throughout the ages. A line wrapped around the post allowed even an average strength person to stop 150 tons of speeding canal boat. Used in tandem they kept the boat from bouncing back and forth while locking through. To move too much could damage the lock gates and earn the captain a fine the equivalent to a month's wages. Worse yet, hitting the downstream lock gate while the water level in the lock was higher than the level below could send the boat through the gates and spell disaster for the boat and her crew (Product 1861).

Instead of choosing some of the more common tangible resources in a canal site (such as the lock gate or the canal boat), this interpretive writing directed readers' attention to the snubbing post—a far less noticeable tangible resource. Linking the tangible resource, the snubbing post, to its intangible meanings of how it "offers quiet testimony to the struggle to survive on the canal," the segment provided readers with insights into the meanings and significance inherent in the canal system. Not just stopping there, the writing explained the possible cause and effect of a failed safety mechanism. It linked additional meanings such as danger, disaster, technology, trust, safety, and survival to the commonly overlooked tangible resource—the snubbing post.

By developing an unexpected link, this interpretive writing example provided a series of opportunities for the readers to form both intellectual and emotional connections with the meanings and significance of the snubbing post. It first described the kinds of danger canal workers faced while navigating between destinations. This provided opportunities for emotional connections with resource meanings such as sympathy, empathy, and respect. In addition, by explaining how the snubbing post functioned, the writing provided an opportunity for intellectual connection through insight, discovery, and cause and effect with the significance of the snubbing post.

Making visible the cause and effect relationships underlying an unexpected link can provide opportunities for a sense of discovery. The following excerpt of an interpretive talk demonstrated why an oyster shell (an unexpected tangible resource) was witness to the economic growth and transportation development (intangible meanings) at Harpers Ferry in the early nineteenth century:

> On July 4th of 1828, there was a race. And Harpers Ferry was on the racecourse. The racecourse was the Potomac River, twisting and turning through the mountains headed toward the west. The two racers: the Chesapeake & Ohio Canal and the Baltimore & Ohio Railroad. Starting on the same day, they took off heading west. The finish line is in the names of the two racers—the Ohio.... Before canal and railroad, Harpers Ferry had 1 hotel and 7 stores. After the arrival of canal and railroad, [there were] 7 hotels and 18 stores. Things showed up in town that had never been seen here before. Things like *this*. People who had been born here had no idea what these were... I will pass this piece around for you. It is an oyster shell. That oyster used to live on the bottom of the Chesapeake Bay. But a waterman long ago scraped it from the bottom into a boat loaded with its brothers and sisters, took it to Baltimore probably, sold it to someone on the train, who brought them out here. The archaeologists tell us there are no oyster shells before 1837 as you dig into the soil (Product 2111).

Perhaps not many people would anticipate a connection between oyster shells and the town of Harpers Ferry. Choosing neither a locomotive, nor a canal boat, but an oyster shell as the unexpected tangible resource to explain the significance of transportation in nineteenth century

rural America, the product further elaborated the effect of transportation (often considered a dull interpretive topic) in the following way:

> In 1837 this railroad bridge was completed and the first train came across into Harpers Ferry. Just think of a sleepy little town in America today. Just a crossroad town, maybe a stop sign, maybe a flashing light, and all of a sudden, they decided to build an interstate highway by that little town. [A] four-lane highway, on ramp, off ramp, stop lights, on one corner, there will be a Wendy's, over here there will be a Wal-Mart, then there is a Holiday Inn, subdivisions all around. Today we call it sprawl. But in Harpers Ferry in the 1830s and 40s, they called it growth, good business, and prosperity. The town took off (Product 2111).

Linking a non-typical or unexpected tangible resource to relevant ideas that people had never thought about or felt provided opportunities for intellectual connection through an in-depth understanding and a sense of discovery. It also created an opportunity for an emotional connection to resource meanings such as surprise and a sense of humor. The following example developed an unexpected link between wasps and the most fearful animal in Olympic National Park, by suggesting that the "most dangerous animal in Olympic National Park" was neither black bears nor mountain lions—but *wasps*. The following interpretive writing product explained why a wasp encounter along the trail was like a combat situation:

> No one had any idea that they would make the 11.5 mile walk into Elkjorn more like combat against guerrilla forces. You'd be walking along, lapsing into a daydream, taking in all the beauty the Elwha valley has to offer, when without warning, you'd be ambushed. Vicious, angry, defensive wasps, grabbing hold of a chunk of flesh with their mandibles and driving in their stinger as quickly as one could react. Members of the party had received 11 stings in the first 3 miles. No matter what one's physical shape, it didn't take long for the call of "BEES!" to turn even the most out-of-shape couch potato into an instant Bruce Jenner (Product 1866).

Another interpretive product linked bacteria (an unexpected tangible resource) to its role as a critical thread in the web of life, providing an opportunity for intellectual connections to the inter-relatedness among the dynamic concepts of an island ecosystem. The writing presented the

idea of inter-relatedness among the forces of decay, the recycling of nutrients, the regeneration of energy, and the balance of life and death:

> No natural balance would be complete without the unseen force of decay. It is the ultimate surrender of a living thing to its environment. As life surrenders to death, bacteria are providing nutrients for the next generation of living things. Bacteria are examples of unseen organisms responsible for turning living substances into non-living nutrients. Without these organisms nutrients would be tied up in an ecosystem in Assateague, yet you would be hard-pressed to see them with the naked eye. Instead, their power can be seen through the beauty of life on Assateague. Every creature you see living on this island has tapped into the energy they have provided. Bacteria are an important thread in a web that includes both life and death. The abundance of life on Assateague is a constant reminder of the graceful exchange that happens between the living and non-living things (Product 1860).

To fully understand the intricate nutrient/energy cycle, one would need to know the "expected players" of each process. These players include, namely, the sun which provides light for the plants to photosynthesize, various plant species which provide energy to other species, and top mammals which feed on almost everything. Choosing none of these obvious elements, the interpretive writing focused on the role bacteria play in the cycle of energy exchange. By doing so, the program provided opportunities for intellectual connections to the meanings of the resource through awareness and understanding of the balance of the nutrient cycle. The audience was also provided with opportunities for emotional connections such as surprise and appreciation after realizing the particular ways they related to or affected each other. The table below (Table 5) listed four examples of unexpected tangible-intangible links and the methods used to develop those links.

Table 5. Examples of Developing an Unexpected Link

Central Focus (program topic)	**Unexpected Tangible-Intangible Link**	**Method Used**
C&O Canal workers	➢ Snubbing posts—the representative of the hardship, struggle, and safety of canal workers	Explanation of cause and effect
The economic growth of Harpers Ferry in the early 19th century	➢ Oyster shells—the witness of the economic growth and transportation development	Explanation of cause and effect
A wilderness trip in Olympic NP	➢ Wasps—the most dangerous animals at Olympic	Explanation of relationship
Assateague Island ecosystem	➢ Bacteria—the force behind the balance of nutrient cycle	Explanation of inter-relatedness

Second Interpretive Strategy: Unlocking Layers of Meanings Embedded in a Symbol

Among the interpretive products that were analyzed, clarifying symbols that comprise the resource or are embedded in the resource also provided opportunities for intellectual and emotional connections to resource meanings. Resource "symbols" generally included the icon(s), idea(s), qualities, or condition(s) people commonly or vaguely associate with the resource. Since many resources preserved by the National Park Service represent American icons, the many layers of resource meanings often become oversimplified (or reduced down) to the level of cliché or motto. Or, at times, the relationship between people and the resource have become fragmented or remained static due to a sense of taken-for-grantedness. Therefore, this interpretive strategy provided visitors with opportunities to (re)discover, to (re)examine, and to (re)define resource meanings within themselves (individually or as a group) that were oftentimes too symbolic to have personal meanings. Meanwhile, some connection opportunities appeared to intentionally "by-pass" the more obvious resource meanings for the time being so that the

audiences could "dig through" deeper layers of meanings. By taking an indirect route around the taken-for-granted meanings, they allowed the multiple layers of resource meanings embedded in a symbol to flow through interpretation. Several methods or techniques were identified to develop opportunities for connections that unlocked the layers of meanings embedded in a symbol. These methods included, asking questions, explaining scenarios, reading quotes, discussing multiple points of view, and doing a demonstration.

1) Examining the "big symbols" and a sense of taken-for-grantedness embedded in the tangible resource

Symbols stand for, represent, or denote something of significance. A material object might resemble (or sometimes vaguely suggest) an idea, quality, or condition. Some of the common symbolizations include: a dove symbolizes peace; a candle symbolizes hope; a gun symbolizes violence and danger. These symbols were considered as "big symbols." Big symbols represent big ideas. However, big ideas sometimes could be taken-for-granted and therefore become meaningless. At Boston National Historical Park, Faneuil Hall represents the idea of freedom. To encourage the audience to have a more personalized connection with the resource meanings, a product examined how big ideas such as freedom and democracy are sometimes taken for granted:

> A particular concern is this building—Faneuil Hall. Before I start, I would like to ask you a couple of questions. I am wondering [if any of you] here have ever been told that your opinion does not matter. And I am wondering whether any of you have been told that "No one wants to hear what you have to say;" or "No one cares about what you say." Because certainly, in this room, there must be some people who had thought about that [question] from time to time. I would guess outside of this hall as well…Yet, this building has been called "The Cradle of Liberty." It is an interesting thing. I am wondering whether you all think that it *should* be called the Cradle of Liberty? (Product 2129).

Many people associate Faneuil Hall with the Revolutionary War and the Independence of the United Sates. Those who already have freedom may not have considered the meanings of not having freedom. By posing the question, "Have you ever been told that your opinion does not matter…that no one cares about what you say?" the interpreter provided an opportunity for the audience to examine how they would feel if their freedom of speech were taken away. The program then likened Faneuil Hall to the "cradle of liberty" by telling the stories of when meetings were called to discuss issues ranging from taxation and representation to independence, from civil rights to the Vietnam war, from gun control to gay rights. In addition, quotes from both Fredrick Douglass and Jefferson Davis on their debates over the slavery issue were read to encourage the audience to examine the ideas of liberty and democracy at their state's own "cradle of liberty" (such as state capitol, city hall, and town meeting where citizens meet and discuss issues). The example provided above demonstrate that once the symbol and its immediate surface meaning (which people generally have some familiarity with) were revealed, this facilitated a connection to additional or in-depth meanings of the resource.

The following opportunity for connection examined the symbolic meanings of a graveyard at George Washington Carver National Historic Site. As a cradle represents birth and the nurture of a new life, a gravestone symbolizes death. The interpreter started the program by saying, "Many of [the engravings] are pictures or symbols. And they mean something. They are not just flowers. They have a meaning. And that is what we are doing here today. [We are going] to discuss some of the meanings behind the symbols that we see. It will also help to read the words we find on the stones..." (Product 2110). An opportunity for intellectual connections, such as insight and understanding with the meanings of the Carver Cemetery, was provided by a series of questions.

Interpreter: "[For the] families that were left behind, what do you think their feelings were?

Audience: "Heaven."

Interpreter: "Heaven. Anything else?"

Audience: "Hope and eternal life."

Interpreter: "Hope and eternal life, exactly, very good. This one here definitely represents the hope in heaven. We have some other children's [headstone] engraving…This one said, "I have love beyond Earth and we will meet in heaven." Absolutely. Let's look at some of the engravings. You will notice on the children's we have three doves in white. When you see that, it has one particular meaning. Anyone guess what it would be?"

Audience: "Peace."

Interpreter: "Okay, the dove is peace. But the dove symbolizes something. What do you think?"

Audience: "Flying off for heaven."

Interpreter: "There you go, flying off for heaven. This represents the soul of the baby or the child. Most often, doves are found on a child's headstone…. But the symbol now [has] a real different layer now, something with peace. Also if you ever see the lamb here, a lot of time you will see a resting lamb. A lamb that is resting and that often symbolizes a child. Most likely now, when you think of a lamb, what do you think of?"

Audience: "Innocence."

Interpreter: "Right, so these are young people and they were just innocent. Okay, let's go ahead and take a look down here. You will notice that there is no epitaph, but it does have a very interesting engraving. The engraving is a weeping willow tree. What do you think the willow tree or any tree on a headstone represents?"

Audience: "Nature? Maybe a mother?"

Interpreter: "What would a tree symbolize? Think [about] Christianity…"

Young Audience: "Life."

Interpreter: "Life, okay, she's got it. The tree of life. Often time the tree on a headstone represents the tree of life. [What did] George Carver's family thinks when they put it on there? Maybe they were thinking the tree of life—the tree of life being eternal life" (Product 2110).

An examination of how these engravings represented peoples' hope for eternal life came forth through the interactions between the interpreter and the audience. Intellectual connections were made when the audience gained an understanding of the symbolic meanings in the headstone engravings.

By reading the epitaphs on the gravestones, the program also provided opportunities for emotional connections with the meanings of the cemetery such as sympathy, sorrow, and a sense of loss. These opportunities were developed by a series of interactions between the interpreter and visitors examining what people might feel when they etched the engravings and epitaphs in the nineteenth century.

> The epitaphs have meanings. What we will do right now is go over to Susan Carvers' stone. I will read it to you. Tell me if you have ever heard this before. "*I am no longer here to stay. Oh, come and follow me away*." Have you ever heard that one or something like it? This epitaph has been used since 1374 in England. This epitaph is commonly used. Maybe the words are changed slightly, but they all have something to do with [this idea]—"Following me [to heaven]. Because I used to be like you." This one is similar: "*Friends, strangers as you pass by; as you are now so once thou die. As I am now as you will be; prepare for death and follow me*." So you see, these epitaphs are similar and they are speaking to you the reader. Some of the texts talk about the person himself. For instance, the mother or a child.... These are the children's [headstones]. All four of them died. And you will see on the headstones [the years when these children died]. [Three of them died in] 1873, 1874, 1875, and [another] one died in 1877. All of them died in a very short time. You might notice that they speak about the child: "*Sleep on, sleep babe, and take thy rest*." That is pretty common. And this [epitaph reads]: "*Better on Earth to bloom in heaven*." What do you think their feelings were? (Product 2110)

Almost everyone can relate to gravestones—death, sorrow, and lifecycles are the common themes in a cemetery. To engage with resource meanings in a personal way, the interpreter asked, "Does anyone know what your engraving would be?" (Product 2110). The opportunity was further developed when the interpreter took time to read some of the epitaphs and asked how visitors would feel if they were the ones burying their loved ones.

2) Discussing multiple points of view embedded in "small symbols"

As some of the opportunities for connections with resource meanings were developed to examine the "big symbols," others were developed by discussing the multiple points of view

represented by "small symbols." Small symbols may not represent big ideas, and yet, they denote the meanings of another sort, which are ascribed by individuals or by groups. An interpretive product from Olympic National Park explained how the Hoh forest represented diverse meanings to different groups: from Native Americans to homesteaders and from loggers to hikers and backpackers. The interpretive products started by suggesting, "This was the last wilderness of the Lower Forty-Eight; the interior Olympics were not officially explored by European-Americans until 1885" (Product 1871). It continued to identify multiple meanings of the wilderness at the Hoh River Valley:

> The wilderness of the Hoh River Valley has different meaning to all who know it; a fishery and hunting ground to American Indians who lived along the river; a claim to tame and develop [to] the first homesteaders, a battle-ground to loggers and environmentalists who waged a "tug-of-war" over its old-growth timber, and a heaven of recreation and solitude to hikers and backpackers. You will find your own meaning as you wander this path (Product 1871).

Another product explained how the Natural Bridges represent the idea of discovery to different groups of people:

> Overlooking White Canyon from Elk Mountain, one visitor to the Natural Bridges commented, "When seen from afar, the great white sandstones—likened to clouds in the valley—at first appear to form an unbroken floor over which the traveler might pass, but when examined more carefully, the presence of steep-sided, alluring canyons is plainly discernible."
>
> People have been exploring the canyons at Natural Bridges for centuries. Some have come looking for a place to live or to pasture their herds, others have come looking for lost treasure while still others have come to unravel the mysteries the Anasazi left behind. And still people come seeking…(Product 1858).

Later on, the writing used four examples to tell the discoveries people have made at Natural Bridges. The four groups of people include scientists' discoveries regarding snake biology, a botanist's search for a rare species, an artist's inspiration received from the bold canyon landscape, and a sense of solitude found by hikers.

This interpretive strategy provided opportunities for clarifying the resource meanings conveyed by symbols, icons, and clichés. They provided a factual foundation to enable the symbolic meanings to elicit new personal or shared understanding. They may also reveal relationships that exist between people and the resource.

Third Interpretive Strategy: Deconstructing Myths and Popular Concepts

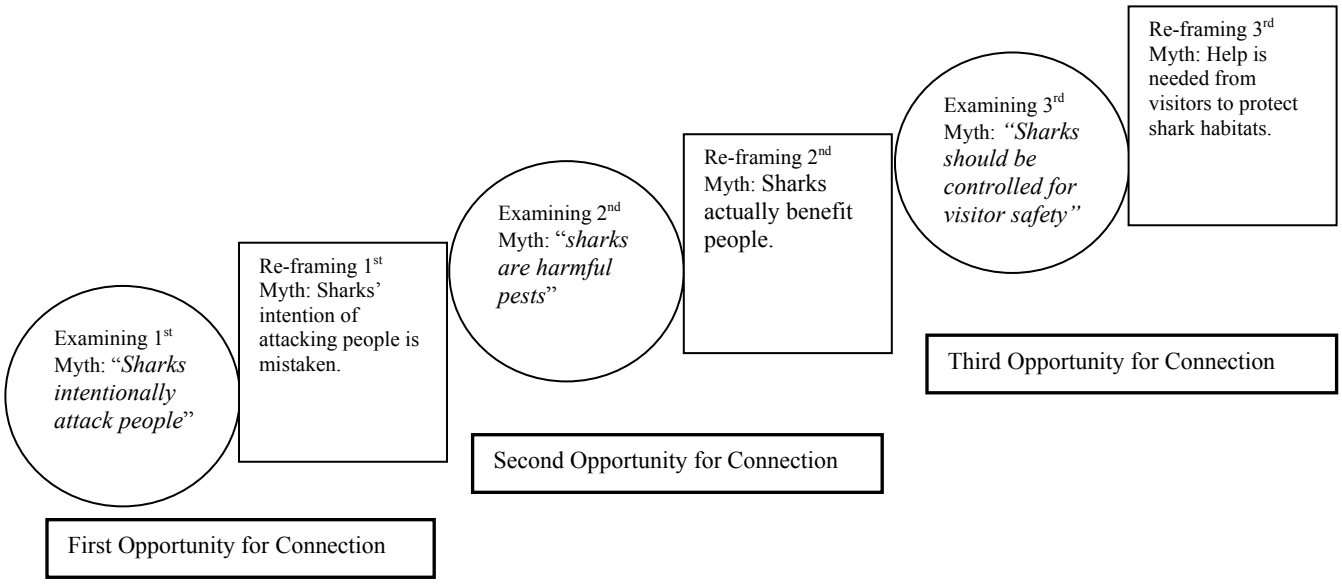
Some opportunities were developed to examine shared myths. The result of the analysis suggested that these connection opportunities were developed to confront the notion of what is "true" verses what is "untrue." Resources that have been widely misunderstood include fearful (and hateful) animals such as sharks (Product 1876), bears (Product 1878), mountain lions (Product 2113; Product 2124), and wolves (Product 2129). Myths can also involve mythical persons, actions, or events. Myths may embody popular ideas concerning "bigger than life" historic figures. Methods that were used included presentation of evidence, problem-solving, and comparing and contrasting.

1) Examining myths and re-framing new understandings and feelings

Opportunities for connections explored meanings embedded in our cultures; that is, how those meanings were perceived, understood, or in many cases *misunderstood*. In an article written for an Everglades National Park newsletter, three opportunities were cohesively developed by exploring the fear people have for sharks to facilitate emotional and intellectual connections to the sharks themselves. Confronting the myth commonly portrayed in media, these connection opportunities reexamined the following misconceptions: (1) sharks intentionally

attack people; (2) sharks are harmful pests; and (3) management agencies should "control" shark problems for visitor safety (Figure 5).

Figure 5. Examining and Reframing a Myth



Acknowledging peoples' common reaction toward sharks—danger—the interpretive product pointed out that, "Everglades National Park even has an area called Shark Valley whose water flows into the Shark River. So does that mean you are in danger if you go in the water?"(Product 1876) The piece then provided the first evidence to counter the myth that sharks intentionally attack people:

> You are in far more danger of drowning or being struck by lightening (not to mention sunburn, jellyfish, and stingrays) than being attacked by a shark. From 1959 to 1990 there were 1,155 people struck by lightning in Florida with 313 fatalities (27%). Over the same time period, 180 shark attacks were reported with 4 of them fatalities (2.2%) (Product 1876).

The product then explained justified that sharks do not intentionally attack swimmers: "Shark experts believe that sharks do not hunt down people for food," rather "Nearly all of the attacks that occur in Florida waters are of a bite-and-release nature" (Product 1876). Pointing to records that suggested incidents occurred in low visibility environments, thus representing a case of "mistaken identity," in which "A shark swims into nearshore waters looking for something to eat, sees [something] splashing and moving around, bites it, doesn't recognize the taste, and keeps on going" (Product 1876). By examining and reframing the myth, the program created an opportunity for intellectual connections with the meanings of sharks such as discovery, unfolding, and understanding. It also provided an opportunity for emotional connections including concern, amazement, and relief.

After examining the first myth that *sharks intentionally attack people*, the writing provided another opportunity for an intellectual connection by explaining shark feeding habits. The second myth was that *sharks are harmful pests*. The interpreter made a twist by providing several examples demonstrating that sharks are actually "beneficial."

> These characteristics and abilities not only enable the shark to survive, but they make sharks targets for sport fishing, for commercial resources such as food and leather, and for scientific studies. Humans actively hunt down and kill between 20-100 million sharks per year in fishing activities.
> [Do you] think you have ever eaten shark? Well, a fish and chips dinner, especially in Great Britain, is usually made with shark meat. Since sharks do not have bones, fish sticks are often made from their flesh. Liver oil extract, shark teeth, and shark cartilage are also harvested and sold. That doctor you see for your next check-up very likely practiced dissection and learned anatomy on a lemon shark, which are important economically for their hide, flesh, and fins. We capture bonnethead sharks to exhibit in aquariums in order to watch and marvel at the gracefulness of these fish…. Fishmeal is made from many species of sharks, including bull sharks. So even though the meat at your table may not be shark meat, the livestock it came from may have been raised on fishmeal made from sharks (Product 1876).

This example demonstrated an opportunity for intellectual connection by providing examples of how people consume sharks for food, medicine, and other purposes. The product highlighted that, in fact, humans have killed more sharks than sharks have killed people. The product went on point out that even our grandparents might have directly benefited by gaining nutrients from sharks. In addition, studies on sharks have helped doctors to understand how our immune system functions:

> If your grandfather took vitamin A to prevent scurvy in WWII, he got it from sharks. Shark livers have 10 times the level of vitamin A as cod liver oil and were used extensively as the vitamin source before a synthetic version was developed. Not to mention that sharks rarely ever get tumors. Biochemist and immunologists maintain live sharks under controlled lab conditions much the same as mice, guinea pigs, and rabbits used in more conventional biomedical research. By exploring what may explain the unusual disease resistance of sharks, scientists hope to find applications to help improve <u>our</u> immune systems. Should we let our fear of the possibility of someone being attacked by a shark impel us to exterminate all sharks? (Product 1876)

Examining the myth that *management agencies should "control" shark problems for visitor safety* provided the third opportunity for connection. Just like the era when wolves and mountain lions were killed to protect humans and livestock, people nowadays might still think that because sharks are harmful pests, management agencies have the responsibility to control (or eliminate) sharks to protect visitor safety. The interpretive writing then highlighted that increased human activities actually endangered Florida's shark population. With low reproductive rates, over-fishing, and lack of protection from shark mothers after birth, and interference from beach recreationists, the future of sharks is in doubt. The interpreter raised a question of "who impacts who" for the readers to ponder at the end.

> The pups are usually born in estuaries, or nearshore waters that are too shallow for larger predators. In order for them to be safe and find plenty of food, they have to have healthy habitats. In other words, the shallow waters provide safe, play areas for young and adults. At night, sharks tend to be more active, and even the larger fish will come inshore to feed. So what happens when an increasing

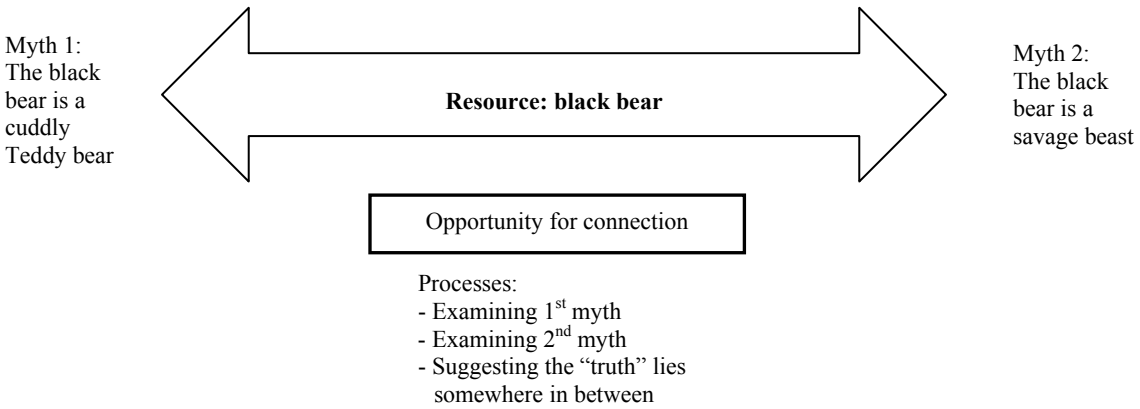
> number of humans who want to play and have fun, decide to come to Florida to spend time at the beaches—swimming, fishing, snorkeling, boating, and surfing in nearshore waters [e]specially when some of these activities are even more enjoyable at night? (Product 1876)

These questions functioned as a reflection on the idea of stewardship. After knowing that sharks have been misunderstood because of their feeding habits, that sharks have been harvested for multiple purposes to benefit people, and that people have impacted shark habitat, readers may have gained new understandings and feelings such as sympathy, gratitude, and even a sense of "justice" for sharks.

2) Pointing out opposing or competing perceptions and suggesting a "middle ground"

Sometimes, the myths appear as polarized perceptions (Figure 6). For example, bears have been perceived as either fuzzy, cuddly Teddy bear or savage beasts that harass hikers and backpackers (Product 1878). For another example, was a backcountry trip in a rainforest either all glory or all hardship? Or was it a combination of both? Further, did it that bittersweet experience in the wilderness give a new perspective toward and appreciation of two worlds, both the wild and the civilized (Product 1866)?

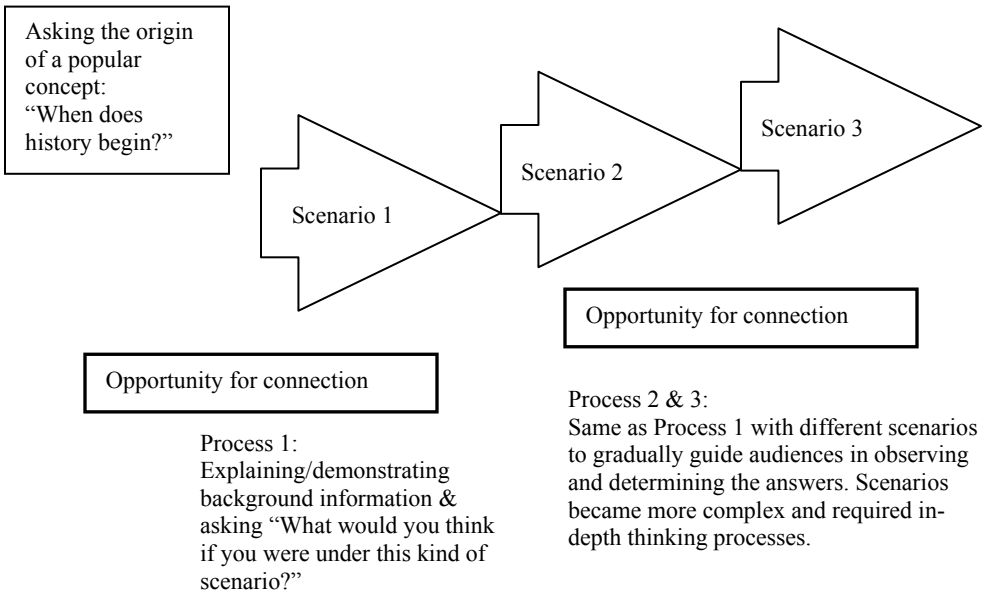
Figure 6. Pointing out Opposing or Competing Perceptions and Suggesting a "Middle Ground"



3) Seeking to identify the origin and creation of a popular concept

In a broader sense, science and history also represent a series of socially constructed and agreed upon notions. Another opportunity was developed to provide an opportunity for an intellectual connection with the making of archaeological stories of the Ozarks at Buffalo National River in Arkansas. The interpretive talk framed the idea that archaeological artifacts represent a tool to build a trustworthy theory of the prehistoric era into a problem-solving format: possible historic evidences were provided to analyze popular understanding regarding history. The product began by posing two questions, (1) "When did history begin?" and (2) "How do archaeologists come to determine what exactly happened?" (Product 2142). By demonstrating and discussing the process of flint-knapping, the ancient technique used for arrow-making, the talk explained that archaeologists examined the various shapes and locations of the onsite remains as pieces of a puzzle to reconstruct what happened (Figure 7). The product emphasized how critical it is that all remaining points be preserved to allow archaeologists to build a complete theory of ancient times.

Figure 7. Seeking to identify the Origin and Creation of a Popular Concept



The program examined what an archaeologist might conclude if one or more items were removed or dislocated from the site, thus developing an opportunity for intellectual connections:

> Interpreter: "All this trash that I knock off [from flint-knapping], anything that is made of a rock that human beings have worked on is called a lithic…So if you have ever heard an archaeologist say "We found a lithic." They might just have found this, or they might have found this, or a point, or the trash. All of these are all lithics…. Well, you could read the story just as well as an archaeologist. Tell me, what have we got here? Rocks, right? Some flakes, ah, I see a few points, not very good points though, kind of ugly, and a big piece of wood here. What happened here if you came on [this place] tomorrow?"
>
> *Audience: "Somebody was making arrows."*
>
> Interpreter: "That is exactly right. Well, that is a pretty decent story, you told that. What direction would I have seen? We are facing that direction. That is right. Was it a person of Native American descent or was it somebody from a European descent, do you know?"
>
> *Audience: "No."*
>
> Interpreter: "That is right. Only by looking at this, you can't tell that. What we need to do is [that] we need to find out more about the story. Do you think this was over a thousand years ago or less than a thousand years ago?"
>
> *Audience: "Less."*
>
> (A series of similar questions by adding or removing objects from the scene.)
>
> Interpreter: "All right, let's add one more chapter to your story. Now, how long ago? How long will that [piece of fur] sit there?"
>
> *Audience: "That will take at least a year."*
>
> Interpreter: "Yeah, what could happen if a raccoon comes by tonight?"
>
> *Audience: "It will eat it."*
>
> Interpreter: "You have told me all this without one single thing written down. That is what archaeologists do. They look at what is there and they read the story. What happens if while I walk into the woods and I see this and I go: "Cool, I think I will take that" and I walk away with this. What did I just do to your story?"
>
> *Audience: "You just messed it up completely."*
>
> Interpreter: "I messed it up completely. I changed the story totally. This is why Buffalo National River is important. You see in the Ozarks, there are tons and tons of points in archaeological sites…That way, the story gets saved and we can learn more about the people here in the Ozarks who lived here a thousand years ago because we don't take it away. And kids like you, someday you might be the archaeologist that comes back to the Buffalo River and tells us what happened" (Product 2142).

The interpretive strategy of deconstructing myths provided opportunities to communicate the range of meanings that are shared and understood by various culture(s) and create new meanings. Data analysis suggested that opportunities for connection were provided by examining myths and framing a "new understanding," by asking the origin of the myth, pointing out polarized misconceptions, and suggesting an appropriate middle ground.

Fourth Interpretive Strategy: Using word pictures to create a holistic experience and understanding

Another type of developed opportunity predominantly used word pictures to facilitate sensory experiences and/or create a holistic understanding of the resource. The interpretive strategy portrayed a "whole new world"—that is, it allowed visitors to see beyond their normal vision, to feel temperatures, to "smell time" in the air, to "experience" a past era or a historic event, and to capture the essence of a natural phenomenon or a sense of wildness. Highly creative, these opportunities for connection reflected a carefully cultivated consciousness more than a technique of simple description. They tended to use artistic, philosophic, and poetic language, providing "thick description" of the interdependence of the natural world or historic events. Interpreters also sought to clarify for visitors the conditions that "the resource faces"—thus placing visitors in the "shoes" of the resource. Occasionally, because of the interpreters' intention to reflect upon the essence of life or nature, some of these opportunities for connections teeter on the fine line between personal reflection and personal opinion.

1) Using word pictures to create a tactile sensation of "experiencing" the resource or event

Some opportunities for connections were developed by creating a sensory-rich world so that visitors could virtually see, smell, hear, touch, and feel the resources. This was especially true for interpretive products focusing on the concept of wilderness, perhaps because the idea and experience of wilderness may have been foreign to many urban residents. A writing product from Badlands National Park started by extending an invitation, "Imagine a place where you can experience past and future at the same time" (Product 1859). It continued to reveal a wilderness scene by using word pictures to reveal the sights, sounds, scents, and atmosphere of the Badlands landscape of the past:

> As you walk across a sea of grass dotted with sunflowers and prickly pear cactus, the sun rises behind a wall of Badlands formations, brushed in pastel colors from the early morning light. In the distance your attention is drawn to the great hulks of bison as they graze their way across the prairie. The quiet of morning is broken by the sound of western meadowlarks and a yip from a prairie dog warning others in town that a coyote has arrived looking for a meal. Soon after the sun touches the ground, the air warms and rises providing the opportunity for a golden eagle perched on a nearby spire to soar above the land (Product 1859).

Sometimes an opportunity was developed to convey a "real sense of the historic moment" for visitors. The description often went beyond "catching a glimpse" to a verbal "reenactment" of an historical account. In portraying the 1912 scene that occurred at Battery Chamberlin at Baker Beach, California, one interpretive writing product emphasized the sights, sounds and smells that soldiers might have experienced while defending the nation's security:

> A voice bellows, "Load!" Like integral parts of the gun they are loading, the thirteen soldiers yank open the breech block (door) at the rear of the barrel, run the ten-foot sponge in and out of the firing chamber, heave in the shell and powder bag, slam the breech block shut and trip a lever. The gun springs up on massive arms, above the wall behind which it hid. The sergeant orders "Fire!" and tugs on the long lanyard attached to the rear of the gun. There is a deafening boom, a tongue of flame, and a huge cloud of smoke! The shell speeds toward the

> target mounted on a pontoon raft seven miles out to sea. The gun recoils, swinging back and down. Behind the wall, the men stand poised to reload. Sweating in their fatigues, the soldiers are thankful that it's a typical cool, foggy morning at the Golden Gate. Thirty seconds have passed.
>
> These are the soldiers of the Coast Artillery; called "concrete soldiers" because their workplaces are massive concrete gun batteries. Their job is to sink enemy ships should any foreign navy attack the United States (Product 1884).

In this account, which was rich in descriptive detail, the interpreter brought to life a moment in the training of soldiers at Battery Chamberlin. The product described the thoughts and feelings the soldiers may have had as they prepared for war. The product described the action in detail. The product used vivid language to bring the readers into the situation. The following product used a similar method to draw a word picture illustrating the operation of a nineteenth century flour mill:

> Today the mill equipment is quiet and the building still. But back in the 1820's, the main power shaft would be spinning, bringing energy to the automatic flour milling equipment. The grain elevators would be spinning, bringing bushel after bushel of grain up to the fanning mill. The hopper boy would be revolving in its tireless and automated task of cooling the ground meal, heated by the grindstones below. Flour and grain would be everywhere, building up in the corners and on the spider webs, heavily laden with dust and insects (Product 1863).

In another product, this method was used to describe how a glacier forcefully sculpted a U-shaped valley: "Thousands of years ago, a river of ice, hundreds of feet thick, inched through the very site like a powerful bulldozer, sculpting this U-shaped valley. The retreating glacier, depositing silt and rock, was followed by an eroding river. This rhythm of deposit and erosion occurred three more times, creating four steps, or terraces, along the valley wall" (Product 1871). By using a word picture, the product facilitated opportunities for connection to resource meanings that might not otherwise have been realized, since they might have been hindered by people's normal way of "seeing" and experiencing the natural environment.

2) Using a word picture to create an intuitive "understanding" of the resource

Other opportunities for connections were developed by using word pictures to articulate the deeper, intuitive experiences of the natural world that humans sometimes experience. For example, this interpretive method might be used to evoke insight, instill an awareness of the "spiritual" dimension, or facilitate perception of natural structures, systems, and cycles. These opportunities highlighted such concepts as time versus timelessness, beauty versus balance, and mystery versus truth.

An opportunity for connection was developed to explore time and timelessness. This excerpt from an interpretive writing product drew readers' attention to the timeless elements of a redwood forest. "There are moments in time that each one of us would like to freeze, to experience again. And there are places that seem to have become a frozen moment in time. The redwood forest is one of these places, both ancient and timeless, with gigantic sprawling ferns, lush green moss, and towering trees" (Product 1857). The concept of time immemorial was a distinct element among this group of developed opportunities for connections—linking, for example, a sense of timelessness to tangible resources such as towering trees, the yipping prairie dogs, or the trace of wind on a sandy beach. An interpretive piece from Badlands National Park explored the relationship between past and present, time and timelessness:

> Experience past and future at the same time in the Badlands Wilderness. Whether tomorrow or 100 years from now, with over 64,000 protected acres, the scene may change, but the experience will be the same. Walk across the rolling prairie and enjoy the solitude in a place untrammeled by people... Badlands National Park takes pride in preserving a wilderness heritage for future generations. Though we celebrate that our wilderness area is now 25 years old, the value in wilderness is that the place and experience it provides has always been and will forever be timeless (Product 1859).

To provide visitors with multi-sensory experiences and to advance holistic understanding, opportunities for connection were developed by describing natural phenomenon and explaining

their inter-relatedness or interdependence with people. An interpretive writing product from Assateague Island started by pointing out that, "To humans, sight is one of our most used senses. However, there are beauty, mystery and grace that lie in the unseen forces of Assateague Island. These unseen forces shape this island and support the natural balance of life" (Product 1860). The interpreter used word pictures to describe and explain how three unseen forces including the wind, microscopic plankton, and the process of decay, influenced the Assateague Island ecosystem and each other. First, the writing linked the force of wind to the idea of mystery:

> Wind is a constant force on Assateague Island. It brings about the change in a barrier island ecosystem. You feel this force when you visit Assateague; it is a force of movement. Tiny molecules of air bump into each other and when they do remarkable events take place. We do not see these molecules, but we know they are there and we know their power.... Without the force of wind, Assateague would not intrigue us with its mystery. Wind is the unseen spark that lights our curiosity about this dynamic, mysterious island (Product 1860).

Second, the writing linked the forms of plankton to the idea of beauty:

> Plankton rides the waves and is transported throughout the ocean. They cannot be seen with the human eye, yet we could not survive without them. Animal plankton, or zooplankton, is the larval form of many larger marine animals. Many species of fish, clams oysters, crabs, mussels, and lobsters are examples of animals that spend their youth floating as plankton. The planktonic forms look very different from the mature forms of these larger marine animals. They represent a unique form of beauty unlike anything ever seen. Plant plankton, or phytoplankton, also represents this unique beauty. They come in a variety of shapes and sizes including chains, spirals, and boxes (Product 1860).

Third, the writing linked the process of decay to the ideas of balance and grace:

> No natural balance would be complete without the unseen force of decay. It is the ultimate surrender of a living thing to its environment. As life surrenders to death, bacteria are providing nutrients for the next generation of living things. Without these organisms nutrients would be tied up in an ecosystem in Assateague, yet you would be hard-pressed to see them with the naked eye... Every creature you see living on this island has tapped into the energy they have provided. Bacteria are an important thread in a web that includes both life and death. The abundance of life on Assateague is a constant reminder of the graceful exchange that happens between the living and non-living things (Product 1860).

While some opportunities for connections were developed to create a tactile sensation of "experiencing" the resource or event, some were developed to reflect an intuitive understanding of the resource. Combining the techniques of using word pictures and writing reflectively, two examples demonstrated a series of connection opportunities with resource meanings. An interpretive writing from Indiana Dunes National Lakeshore helped create a tactile sensation of "experiencing snow" as a natural phenomenon. It also created a holistic understanding of the role Indian Dunes National Lakeshore plays in the natural system. The product described the scene of winter coming:

> A tiny frozen flake descended to the carpeting of burnt orange oak leaves. It was time. They began falling from above casually covering the world below. The local area had already received a few dustings of snow, but this was the commencement of the first significant covering. It was the kind of snowfall where thick, fluffy white puffs drop at the same speed all around you as if your world is slowly rising or the powdery sky falling. For me there is always a moment of complete peace as this natural phenomenon occurs (Product 1881).

An opportunity for intellectual connections was then provided to help readers understand the interrelationship between wildlife and natural cycles:

> The last leaf has already drifted groundward signaling that the tree is ready to begin the challenge of balancing food use versus food storage through the season of limited sunlight. The final scoop of dirt has hit the forest floor as the striped skunk completes its underground den renovation for a winter's rest. The White-tailed Deer glance upward as their food source changes from snow-covered herbaceous ground plants and nuts to limited tree buds and bark (Product 1881).

An opportunity for emotional connection was created when the "reactions" that animals might have and the challenges they face was suggested in the following:

> Some animals might face a brief moment of panic wondering if they have stored enough seeds to eat, or cached enough acorns, or built up enough fat reserves to winter through. As the snow descends the struggle to survive the uncompromising cold season begins and will not end for months. Will they make it? (Product 1881)

By having an awareness of the natural rhythm and sharing first person experiences, opportunities for both intellectual and emotional connections were developed when awareness and experience were intertwined:

> As I stroll further along the trail and up the wooded ridgeline, I take a closer look at each remaining sign of life: an animal track. A squirrel's nest or dray, the half-covered, withered plants. The timing and depth of this snowfall will directly affect plant and animal populations in coming seasons. An early, deep snow cover will decrease animal populations for the lack of plants to eat, but a late, mild snow cover will decrease some plant populations for they remain vulnerable to animals eating more of them. We realize it is natural. This balance of life has been happening for millions of years. I still root for the life and perseverance of all, but I know that's not how it all works out.
>
> As I leave the forest it is still snowing hard. Everything is taking on that frosting covered whiteness that looks like a scene on a greeting card. Now the lonesome Dune Ridge Trail is waiting for others, like you, to experience the harsh yet peaceful beauty of winter. Take relief and satisfaction knowing that the Indiana Dunes National Lakeshore exists as a place where the balance of nature can bring stability to our lives. This first snowfall has meant something different to everyone and everything it touches (Product 1881).

The example conveyed the elements of the natural cycle. It presented the scenes, senses, and feelings of winter coming. While reading the piece, visitors could "come to a realization" of what animals might face as winter approaches. To this point, the analysis of the developed opportunities suggested that interpretation is extremely content-sensitive. As illustrated in this section, the use of artistic, philosophic, and poetic language has created opportunities for both emotional and intellectual connections with the meanings of the resource. The results of this interpretive strategy also suggested that an understanding of interdependent relationships not be realized without the efforts of interpretation.

Not Fully Developed Tangible-Intangible Links

As indicated in the previous section, a developed opportunity for connection links a tangible resource and its intangible meanings by using one or more interpretive methods(s). Generally speaking, opportunities that were *not* fully developed had either a tangible-intangible link or a method capable of supporting the link, but not both. When presenting historical resources, these undeveloped tangible-intangible links used the past tense almost exclusively without relating or referring to their present audience or readers. In addition, these not fully developed opportunities fell into two categories: (1) those relying only on stories or information and (2) those that either reduced the tangible-intangible link to a "meaning-like statement" or lacked adequate methods.

1st Category: Assuming that story line, chronology, or information alone can provide an opportunity for connections.

Data analysis suggested that some interpretive products appeared to rely mainly on the flow of the story as an attempt to arouse emotions or to focus exclusively on providing information as an attempt to inject understanding. Compelling stories about human conflict—such as battle scenes, racial tensions, class struggles, and even criminal conduct—by and large attract audience attention. People *naturally* respond to these topics with emotions such as fear, sadness, regret, guilt, grief, empathy, or anger. Many of these events represented significant moments in human history that defined an era. Such moments had grave social and personal impacts. After all, agencies like the National Park Service preserve historic sites, landmarks, and places where something of national significance happened. However, focusing on the story line alone or how the event progressed without further explanation of its causes, relationships, insights, consequences, or effect on others was insufficient to provide opportunities for

connections to audience-relevant meanings. For instance, the following product gave a historic account of a tragic event in the 1960s:

> On Monday, January 3, 1966, 21-year old Sammy Younge, Jr. was shot and killed after asking to use the "Whites Only" restroom inside the gas station next door…
>
> On this fateful day, Sammy chose to challenge the accepted "status quo" in Tuskegee, Alabama. Sammy went into the gas station next door to make a purchase. While there he asked to use the restroom. He was directed to the "Blacks Only" restroom outside. Sammy refused to comply, citing the Civil Rights Act.
>
> Angry words were exchanged between Sammy and the station owner. The owner grabbed his gun. A chase followed, which resulted in Sammy being fatally shot in the back of the head as he fled for his life. His dead body was found here between the Greyhound bus station and the gas station (Product 1856).

The analysis process identified that the tangible resource in the writing was "the event of how Sammy Younge, Jr. lost his life challenging the segregation system" and the method was telling a story. However, the meanings of this event were unexplored. What did it mean that Sammy Younge Jr. risked his life challenging the segregation system? What were the causes for his decision? How did the Tuskegee Institute influence his way of thinking? What were the impacts of his action on other people? None of these were discussed in the story. By its strict use of past tense, and failure to address the concerns of present audiences; the writing did not appear to deliberately relate to its present reader.

Similarly, focusing exclusively on processing information as an attempt to provide opportunities for connections such as understanding of context and learning was also common. Without explaining the relationship, the cause and consequences, and how it might be relevant to the visitors, providing information alone fell short of creating opportunities for the audience to have holistic experiences and understanding of the meanings of the resource. An interpretive writing product provided chronological information detailing how Lewis Mountain of Shenandoah National Park was once segregated:

> Lewis Mountain opened as a segregated campground to Negros in the summer of 1940. It was not until late December of 1945 that this campground was desegregated. The Department of Interior in Washington issued a general bulletin to all National Park concessionaires mandating full desegregation of all facilities in the national parks. It took a couple of years, but by October of 1947, both black and white visitors shared the Lewis Mountain facilities (Product 1877).

The result of data analysis suggested that the writing may have attempted to instill a sense of care about the tangible resource—a past event of a once segregated Lewis Mountain. However, in this case, the idea of segregation was not developed. The writing did not seem to explore the meaning of a once segregated campground in a national park site. The content did not appear to be sufficient in addressing the causes, relationships, consequences, and effects of this incident. The segment did not appear to provide opportunities for intellectual and emotional connections with the meanings of the Lewis Mountain Campground by answering questions like "What was it like to be in a segregated situation?" "How might people have felt?" or "How is Shenandoah National Park perceived by those once un-welcomed visitors?" Like the previous example, the writing used only past tense.

Additionally, telling the history of a past era presented a challenge for the interpreter to provide opportunities for intellectual and emotional connections, and required them to go beyond detailed descriptions of "what happened to whom and when." One example illustrated how the interpretation of a historic resource tended to rely primarily on providing information:

> The United States declared war against Britain in 1812. Most of the fighting was on the East Coast of the United States and in the Great Lakes area. In 1814, the British were in the Gulf and New Orleans began to prepare for the invasion. The ladies of New Orleans bravely waved from their balconies in support of their loved ones, as they performed military drills in the streets. One courageous widow from Atakapas area, outside New Orleans wrote Governor Claiborne regretting she only had four sons to send to the defense of her country. Now the citizens waited for the great American general Andrew Jackson who would lead them. On December 2, 1814, Andrew Jackson arrived in the city after an 11-day journey through the wilderness from Mobile. The ladies were astonished by his appearance. One lady had prepared a grand breakfast for Jackson but exclaimed to

> the plantation owner that her labors were wasted on an "old 'Kaintuck' flatboatman." Later that evening, Jackson in full dress uniform charmed the ladies of New Orleans and reassured them of their safety (Product 1869).

The writing did not appear to emphasize a specific tangible resource that the interpreter intended the readers to care more about. Was it the War of 1812? The ladies of New Orleans? Or General Andrew Jackson? If the writing intended to provide opportunities for intellectual connections such as insight, what was the effect of the ladies' of New Orleans contribution to the War of 1812? If the writing also intended to provide opportunities for emotional connections such as admiration or empathy, how could it be further developed by referring to the widow lamenting that she only had four sons to send to the "defense of her country"? How could this historic event be better related to the lives of contemporary audience?

2nd Category: Reducing the tangible-intangible link to a "meaning-like statement" or lacking adequate methods

1) Making a meaning-like statement and stopping there (i.e., a failure to fully develop the tangible-intangible link)

Some of the products made a meaning-like statement as an attempt to develop the tangible-intangible link between the resource and resource meanings. To explain the significance of a historic event, some products described what had happened in great detail, concluding with a "statement" at the end. However, the statement did not explain, describe, or illustrate "why" or "in what way" the resource was meaningful, significant, or relevant to the audience. As a result, the audience might ask, "Why should I care?" A product exhibiting this characteristic would typically be structured as follows: "In year XXXX, someone did something in this place, therefore, the resource is significant" or "… therefore, the resource represents something." For example, an interpretive product first described what happened to an African American college

student while asking to use a forbidden restroom in the 1960s. Then the product made a meaning-like statement but did not develop the idea any further:

> [Description of how Sammy Younge, Jr. was shot.] Sammy was a troubled young man—troubled at the inequities and injustices he saw all around him. Sammy was a fighter—he fought for his country; he fought tirelessly and ceaselessly to right the wrongs he saw around him… Sammy Younge, Jr. was the first black college student to die in the Black Liberation Movement (Product 1856).

Interpretive products exhibiting this characteristic suggest two questions. First, could narrative stories by themselves comprise a "stand alone" opportunity for emotional connections? Second, how do narrative stories answer questions like "so what?" Another interpretive writing example recalled how soldiers lost their lives during the Vietnam War:

> Clarence Matthews Newcomb wasn't the typical soldier. He was a Maryland National Guardsman in his hometown of Chestertown. Clarence loved his monthly guard meetings as a way to break the boring routine of his full time job as a marketing representative for the local telephone company. He concentrated on his military training and eventually rose to the rank of Captain commanding the rifle company composed of his fellow Chestertown citizens. The United States commitment in Vietnam required officers and Maryland National Guard Captain Clarence Newcomb volunteered for both active duty and a combat assignment in Southeast Asia. Not all soldiers can be given combat commands. Captain Newcomb was given a staff position in Saigon. He lived in a relatively secure bachelor officers quarters and drove to and from work in a jeep. On June 25, 1965, while driving in a torrential rain Clarence lost control of his jeep. It careened into a retaining wall crushing his chest against the steering wheel. Captain Clarence Newcomb was dead before anyone could come to his assistance. For his sacrifice Captain Newcomb's name is carved on panel 2, line 19 on the Vietnam Wall (Product 1883).

The writing attempted to tell a story so that readers could come to care more about Caption Newcomb's sense of duty and how he lost his life. However, the link between the tangible resource and intangible meanings was minimal. What were the intangible meanings of this soldier's act other than that Newcomb "wasn't the typical soldier" as stated in the beginning? What does it mean that soldier Newcomb's name was carved on the wall of the Vietnam Memorial? Does it represent a sense of duty, commitment, patriotism, or willingness to give up a

safer lifestyle for his ideal? What was the significance of his sacrifice? None of this was clearly spelled out in the writing. How did the story itself answer the "so what" question? In the end, the product makes a "statement" suggesting that stories like that were "just small samplings of the sacrifices witnessed by 58,226 persons to have died in that, our country's longest and most divisive war. First and foremost, the Vietnam Wall represents real people and real events and real sacrifice, there lies its true meaning" (Product 1883). This concluding statement was the only sentence in the whole text that provided the beginning of a connection opportunity.

Analysis results suggested that some interpretive products presented the beginning of an opportunity, however, lacking additional "meat" or "juice" to support the point being made they failed to provide a connection opportunity. Sometimes, with little or no further explanation, the ideas or concepts presented were too hard (or too abstract) to comprehend. The link between the tangible resource (redwood burl) and the intangible meaning of timeless ecosystem was not fully developed in the following interpretive writing excerpt, "A walk through the forests of Redwood National and State Parks offers a glimpse at a seemingly timeless ecosystem. Redwood burls, in their twisted, knotted forms, offer the potential for coast redwoods to grow and thrive for millennia" (Product 1857). Without additional support, the idea of a "timeless ecosystem" and its link to redwood burls was too complex to grasp.

2) Not having sufficient illustrating methods or examples

Sometimes, products made a tangible-intangible link, but they did not incorporate appropriate methods to develop the link. Or, the product used a method with insufficient depth, *quickly* "jumping into" the next method to illustrate or explain "why." This rapid shift in

methods actually raised more questions than it answered. One interpretive writing product linked the redwood forest to its intangible meaning of a sense of timelessness in the following:

> There are moments in time that each one of us would like to freeze, to experience again. And there are places that seem to have achieved frozen moments in time. The redwood forest is one of these places, both ancient and timeless, with gigantic sprawling ferns, lush green moss, and towering trees (Product 1857).

There seemed to be the beginning of a connection opportunity by using word pictures (gigantic sprawling ferns, lush green moss, and towering trees). However, the flow of having a fully developed opportunity such as awe and wonder was interrupted by a piece of factual information: "The forest has flourished along the North Coast for 20 million years with individual coast redwoods living up to 2,000 years…" (Product 1857). Then the product employed a new method of providing scientific evidence/explanation:

> However, the exact genetic code of one tree can be replicated through the large, bumpy masses on redwood trunks that can take the shape of gnarled faces or fanciful animals. These shapes are burls, masses of unsprouted bud tissue that store copies of the trees' genetic material. While the redwood forest can be easily harmed by human and natural events, the coast redwoord's (*Sequoia sempervirens)* ability to resprout from burls lends a sense of timelessness to individual trees (Product 1857).

The methods that the interpreter used to establish a link between the redwood forest and timelessness were confusing. If the product had selected an intangible meaning that was further removed from the tangible resource, this unit might look like, "Burls are masses of unsprouted bud tissue that store copies of the trees' genetic material. However, understanding how these often overlooked, ugly "things" work may unlock the secret of how redwood forests survive harsh natural disasters such as fire, drought, and attacks from insects and diseases." Or, if the product attempted to unlock the layers of meanings embedded in the object using multiple points of view, then the text may have been developed as follows:

> The same patch of forest has been the witness of time. For animal species that had once dominated the continent, for the tribes who passed here on their way to further places, for those who actually stayed in this region and called it home, for Lewis and Clark (what thoughts were in their minds when they saw these gigantic trees?), and for those "tree huggers" who attempted to save them from the axe, what meanings did they ascribe? Rarely is there a species that could be traced back so long. It is not about the survival of a single tree per se, but the species as a whole—all of which can be credited to one single feature—burls. What, then, is the secret?

On the other hand, if the product attempted to deconstruct existing myths, the unit might look like this:

> It is believed that there is a special, supernatural power that dwells deep in the forest. Cultures past and present have developed myths surrounding forests or the Black Forest…

If, however, the product used a word picture, poetic language might be used to describe how a person might see, hear, smell, or feel in terms of temperature or touch in a timeless redwood forest. It was suggested that at least one of the above mentioned interpretive strategies, and many other methods such as comparisons, problem-solving, or quoting literary or natural writing could help improve this piece. As it is, interpretive elements were present, but with confusing results. Such products may suggest the tangible resource represents something, but then fail to explain "why?"

Tough calls: Sometimes it is difficult to determine if an opportunity for connection has been provided

Data analysis also suggested that it can be difficult to determine whether an opportunity for connection has been fully developed. This situation represents a tough call. Interpretive products may appear to have a tangible-intangible link developed by a method.

For instance, a description of recreation opportunities may seem like an opportunity for an emotional connection to resource meanings. However, does this kind of content really provide

opportunities for connection with the meanings of the resource? For example, if the focus of a writing piece is to provide information regarding recreation opportunities such as activities visitors could do in the park, services the park provides, and scenery visitors could see, does this writing provide opportunities for connections to resource meanings? Did the interpreter attempt to instill a sense of care about recreation opportunities or about the resource? Would the audience care more about the resource and have a sense of stewardship based on knowing more about where they could view wildlife? These questions represent the potential reasons for a tough call situation.

CHAPTER FIVE

DISCUSSION

Based on theoretical aspects of how people connect to meanings, the conceptual model proposed four types of connections derived from two processes: meaning forming and meaning revealing. The results of the study have provided examples and insights to better understand the development of opportunities for connections through meaning revealing processes. Further, the results of the study examine the function of resource meanings in interpretation.

To understand how opportunities for connections function, the first objective of this study aimed to systematically review the concept of meanings as understood within sociological and philosophical traditions. The review of classic and emerging theories draws attention to how interpretation unfolds or clarifies the meanings of an object or an event. The conceptual framework of meanings and interpretation proposed in Chapter Two (p. 41) suggests that through the processes of ascribing, constructing, making, realizing or stimulating meanings, individuals form more personalized and/or more shared understanding of resource meanings. The model also highlights the role of interpretation in revealing meanings and relationships that are potentially contained or represented in the resource. The meaning-revealing process of interpretation provides opportunities for the mutual transaction of meanings between interpreters and visitors.

To fulfill the second study objective of identifying the types and characteristics of opportunities for intellectual and emotional connections to resource meanings, forty-nine interpretive products submitted for peer review to the Interpretive Development Program of the NPS were collected and analyzed. The results provided detailed descriptions of a phenomenon called interpretation. Interpretive master Freeman Tilden is probably also the first interpretive

researcher. While campaigning the idea of preserving national parks, Tilden "generated a love and enthusiasm for interpretation" (NPS, 1991b). To further understand interpretation, Tilden observed interpretive programs and products. In the 1950s to 1960s, Tilden explored many national park sites, attended interpretive programs, and observed exhibits in the visitor centers. A contemporary research method textbook will probably suggest that Tilden selected observation as his primary method. The textbook author will probably categorize Tilden's *multimethod approach* to study interpretation as including: ethnography, mapping and trace measures, informal interview, case study, and content analysis. Following in Tilden's footsteps, the study observed and analyzed the content of interpretive products to better understand the development of intellectual and emotional connection opportunities for the meanings of national park resources.

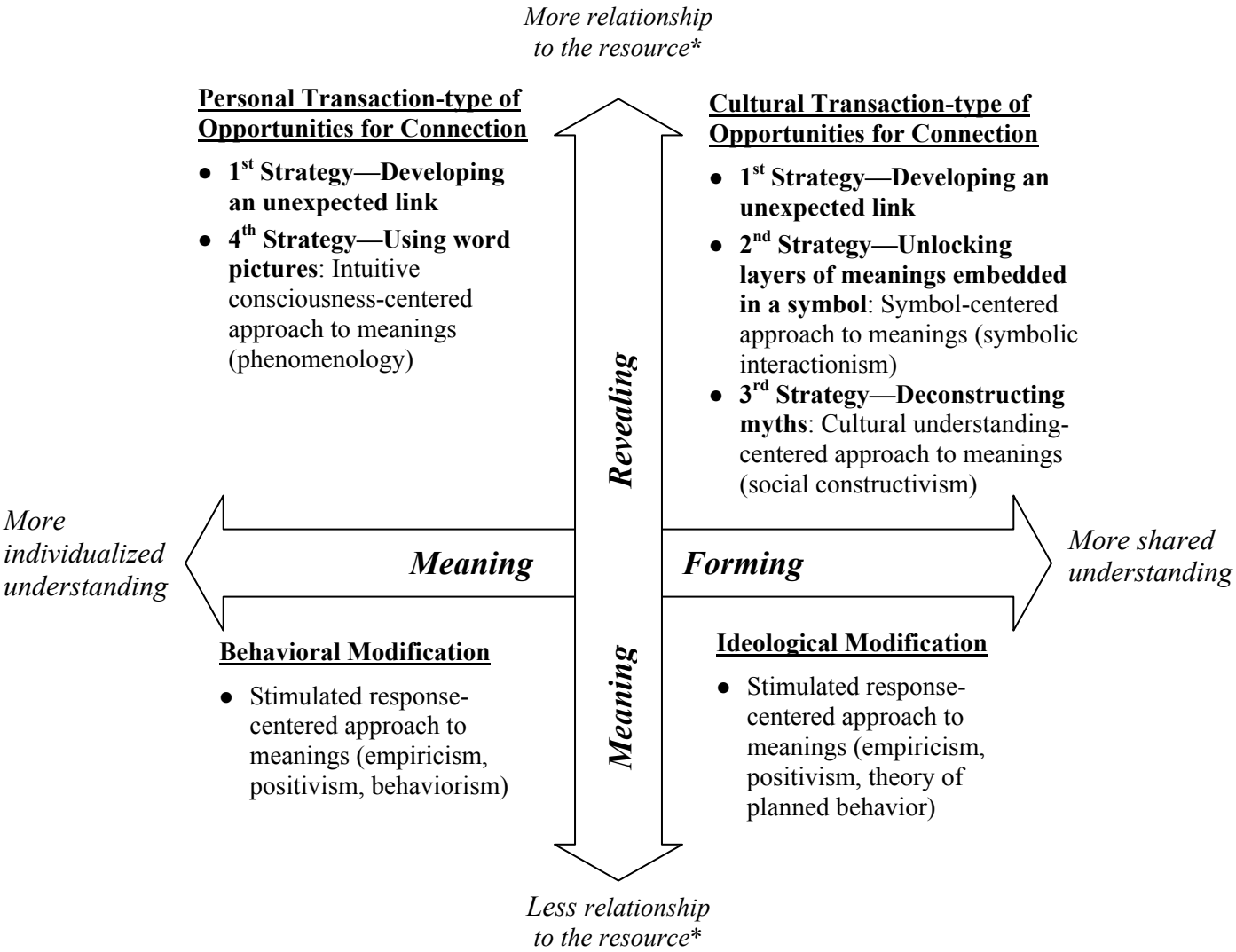
The study identified four primary strategies interpreters used in developing opportunities for intellectual and emotional connections with resource meanings: (1) Developing unexpected links, (2) Unlocking layers of meanings embedded in a symbol, (3) Deconstructing myths, and (4) Using word pictures to create a holistic experience and understanding. An interpretive "strategy" is defined as a set of methods/techniques interpreters used to match resource meanings with possible visitor perspectives of the resource.

MAJOR STUDY FINDINGS

The conceptual continuum of meaning and interpretation first presented in Figure 1 (*supra*, p. 31) highlights many features of interpretation based on review of existing theories. The conceptual framework presented in Figure 2 (reprinted in p. 92) illustrates the links between meanings, interpretation, and connections. It builds upon the conceptual continuum presented in

Figure 1 by identifying the types of connections that individuals form with the meanings of the resource. By folding results from the product analysis into the meaning/interpretation continuum, Figure 8 helps to inform our understanding of how the conceptual model can work.

Figure 8. An Example of How Opportunities for Connections can Function in Interpretation



* For the purpose of this framework, the "resource" is conceptualized broadly as an object, event, person or place.

1) Results Reveal How Interpretation Can Provide Connection Opportunities Related to Individualized Meanings

While all of the interpretive strategies identified from product analysis support the conceptual model, the interpretive strategy of **using word pictures to create a holistic experience and understanding of resource meanings** provides an example of the meaning/interpretation conceptual continuum in Figure 8. By giving a detailed or graphic account of the landscape or an historic event, interpretation provides opportunities for the audience to form meanings and have more individualized understanding of the resource, hence, the meaning-forming process. Denzin stressed (1989) that "Emotionality and shared experience provide the conditions for deep, authentic understanding" (p. 33). In addition, by articulating the intuitive insights of the natural world or the deeper perceptions such as a sense of history that visitors may or may not be aware of, interpretation provides opportunities for the visitors to establish a personal relationship with the resource through the meaning-revealing process (Figure 8).

Combining the two dimensions, interpretation can provide opportunities for the audience to have the personal transaction-type of connections (Figure 2, reprinted below). Maslow (1964) elaborated this kind of understanding and relationship as a "peak experience:"

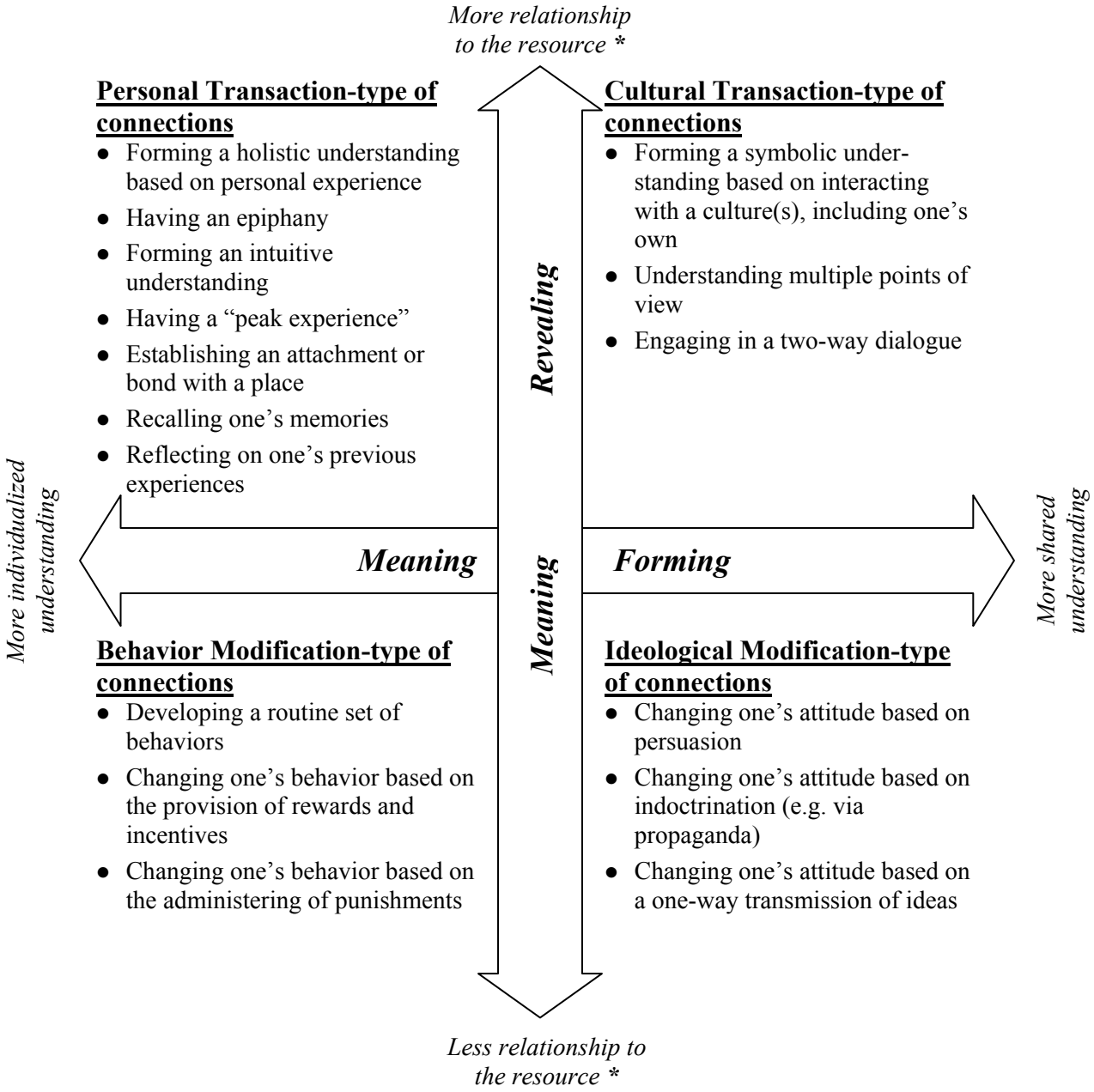
> This new "knowledge" can be a change in attitude, valuing reality in a different way, seeing things from a new perspective, from a different centering point. Possibly a good many instances could come under the head of gestalt-perception, i.e., of seeing chaos in a newly organized way—or of shifting from one gestalt to another, of breaking up an imbeddedness or creating a new one, changing figure-ground relationships, of making a better gestalt, of closure, in a word, of the cognition of relationships and their organization (p. 78).

Other connections may include forming a holistic understanding based on the tactile sensation of experiencing the resource, having an epiphany, establishing an attachment or bond with a place,

recalling one's memories, and reflecting on one's previous experiences. This interpretive strategy of using word pictures in facilitating opportunities for connections is an example of what interpretation can provide: it "[gives] life to a picture that was otherwise beautiful but inert because it was unrelated to anything within the experience of the beholder" (Tilden, 1977, p. 37).

Without actual input from visitors to verify and document that connections are being made, the validation of the conceptual model in Figure 2 cannot be made. However, the results from the literature review can identify the *potential* types of connections that can be made with resource meanings through interpretation. The results from the product content analysis then inform our understanding of how interpretation can function through the facilitation of opportunities for connections. The product analysis identifies a strategy of using word pictures to create a holistic experience and more individualized understanding with resource meaning. However, the product analysis can not identify opportunities for connections that facilitate belief-centered meanings that visitors initially bring to the experience themselves.

Figure 2. A Conceptual Framework of Meanings, Interpretation and Connections



***** For the purpose of this framework, the "resource" is conceptualized broadly as an object, event, person or place.

2) Results Reveal How Interpretation Can Provide Connection Opportunities Related to Shared Meanings

The conceptual framework also suggests how interpretation can provide opportunities for cultural transaction-types of connections. By examining the shared understanding or culturally driven aspect of meanings and by revealing meanings to establish more relationship with the resource, visitors may be more likely to form intellectual and emotional connections (Figure 2). These cultural transaction-type of connections include forming a symbolic or thematic understanding based on interacting with a culture and understanding multiple points of view embedded in the resource. Visitors may be more likely to engage in a two-way dialogue once the connections are made or while experiencing interpretation on-site.

Two of the interpretive strategies from the product analysis, **unlocking layers of meanings embedded in a symbol** and **deconstructing myths** illustrate how interpretation provides opportunities for connections related to shared meanings. First, the examination of the "big symbols" and a sense of taken-for-grantedness of the resource represent the meaning-forming process. Inspecting the nature, quality, and condition of the symbolic meanings in detail, interpretation can also provide opportunities to examine resource meanings that cultures share. Phenomenologist Alfred Schutz (1932/1967) called this kind of generalization *typifications*: "They are typical trees, typical children, typical love, greetings, and everything else…" (Schutz, 1932/1967). When reality is represented by symbols, Blumer (1969) pointed out that "Meaning is either taken for granted and thus pushed aside as unimportant or it is regarded as a mere neutral link between the factors responsible for human behavior and this behavior as the product of such factors" (p. 2). Examining the symbolic nature of resource meanings provides the audience with opportunities to better comprehend the mutual agreement of shared meanings and

understandings. By "[locating] these patterns in the taken-for-granted structures of the everyday world of conversation and interaction" as Denzin (1989) explained, the symbolic meanings of a tangible object thus can come to life.

Additionally, the strategy of **deconstructing a myth** is developed to confront the notion of what is "true" verses what is "untrue." "One task of the art of interpretation is to peel away layer after layer of mystery from the natural and cultural world. Of course diminishing the mystery need not limit the sense of wonder. Certainly, enjoyment, knowledge, and inspiration can increase together" (Beck & Cable, 1999, p. 47). An observation of this strategy focuses on the contrasting processes between interpretation and deconstruction. On one hand, interpretation *reconstructs* meanings by describing, explaining, and examining the inherent meanings in the resource. Meanwhile, *deconstruction* reveals that meanings derived from generalization that are not necessarily "true," popular misconceptions, or myths. By encouraging back and forth discussion of perceptions of what is true verses what is untrue, audiences can be provoked to engage in a two-way dialogue (or perhaps an internal dialogue) about the resource meanings constructed by cultures.

3) Opportunities for Connections with Resource Meanings Are Produced by Conscious Efforts to Develop Tangible-Intangible Links

The second question of the research was to identify the types and characteristics of the opportunities for intellectual and emotional connections in the interpretive products submitted to the Interpretive Development Program for review. Study findings recognize that opportunities for intellectual and/or emotional connection are the result of conscious effort on the part of the interpreter. "True" connection opportunities are not mere "happy accidents." Presentation of

factual information alone does not provide visitors with opportunities to connect to resource meanings intellectually or emotionally. The analysis of how opportunities for connections were structured in the interpretive products suggests intention and skill in developing the gradual unfolding, the bringing forth, the unveiling of mystery, and bringing into fuller view the link between resource meanings and visitor experiences. Some interpreters demonstrated these skills more fully than others. Tilden considered this ability as the interpreter's greatest challenge:

> I think that here lies the greatest challenge to the interpreter…what to do; what to say; how to point the way; how to connect the visitor's own life with something, even one thing, among all the custodial treasures;….One thing I am sure: it cannot be done merely be displaying wares, nor imparting mere facts. The thing is a thing of the spirit;….it must be directed in spirit and in truth (NPS, 1991b).

The Interpretive Development Program (2002a) recognizes the challenge and identifies several methods that interpreters can use to create opportunities for connections. The *Interpretive Process Model*, a model used as a training tool, states:

> There are many ways to develop a link into an opportunity for an emotional or intellectual connection to the meanings of the resource. Success depends on the link, the theme, the interpreter's knowledge of the resource and the audience, style, and the purpose of the interpretive product. Stories, explanations, quotes, activities, demonstrations, examples, evidence, illustrations, questions, and discussions are just some of the methods interpreters use (NPS, 2002a, p. 8).

Study results from the product analysis expand upon and amplify that list of methods interpreters can use.

Additionally, undeveloped tangible-intangible links differed substantially from those that were developed. Illuminating/exploring unexpected and yet significant reasons or relationships in a story or informational presentation, provides opportunities for connections to resource meanings. The role of explanation in developing an unexpected link unveils the cause, origin, or reason of why those particular features or attributes might have any significance with the tangible resource. These opportunities may have been developed initially to function as

opportunities for intellectual connections such as discovery, insight or recognition. It appears that by doing so, the surprising, astonishing, and humorous effects of these "ah-ha" moments may also provide opportunities for emotional connections.

Selecting and implementing an appropriate method plays a key role in moving the audience along the meaning-forming axis. In the case of **unlocking the embedded meanings in a symbol**, merely stating that the symbol represents something else is not enough. Opportunities for connections are developed by asking questions or outlining scenarios for the visitors to exercise in their minds the taken-for-granted resource meanings. Also, by reading quotes from opposing sides or discussing multiple points of view on a specific topic, interpretive products are more likely to provide visitors with multiple opportunities (and more visitors with an opportunity) to connect with the resource as they gradually understand the range of perspectives. Similarly, several methods are used in **deconstructing myths**. By examining a myth and providing evidence, interpretation provides the audience with chances to reach a new understanding. For example, pointing out opposing or competing perceptions and suggesting a "middle ground" is another way to acknowledge (and perhaps eliminate or remove) the fear commonly associated with fearful animals (Figure 6, p. 70). In addition, seeking to identify the origin of a popular misconception also helps visitors discover what happened historically or how the concept was formed (Figure 7, p. 71).

Another observation of this *intentional effort* in developing connection opportunities is the idea of referencing. Using more relational terms (including words such as you, your, we, and our) in discussing the resource, some interpretive products facilitated opportunities for the audience to establish a relationship with the resource by referring to "that resource" as "our

resource." For example, compare the following two quotes in terms of how the resource was referred to and how the audiences were involved in the interpretive products:

> When Lewis Mountain Campground opened in the summer of 1940, it was the only campground in Shenandoah National Park that was reserved for Negroes…. During this time just before the opening of Lewis Mountain Campground, there was a growing demand for picnic areas for colored people. Negroes were traveling and they were visiting national parks all over the country, including Shenandoah National Park. Many of them traveling from Washington and Baltimore to visit Shenandoah National Park often wrote back to Washington about their objections to segregation in the park (Product 1877).

> A particular concern is this building—Faneuil Hall. Before I start, I would like to ask you a couple of questions. I am wondering [if any of you] here have ever been told that your opinion does not matter. And I am wondering whether any of you have been told that "No one wants to hear what you have to say;" or "No one cares about what you say." Because certainly, in this room, there must be some people who had thought about that [question] from time to time. I would guess outside of this hall as well…Yet, this building has been called "The Cradle of Liberty." It is an interesting thing. I am wondering whether you all think that it *should* be called the Cradle of Liberty? (Product 2129).

Defining this method as "self-referencing," Sam Ham (1992) emphasized the importance of getting the audience to "think about themselves and their own experience" (p. 17). Ham suggests that "[self-referencing] causes [the audience] to connect the new ideas [interpreters] are giving them with something they already care about, themselves" (p. 17).

The structure and development of opportunities for connections in the products examined have important implications for interpretive training and employee development which will be discussed in the study implication section. Tilden himself recognized the challenge but also believed that interpretation is "teachable." Study results shed light on how the strategies can be taught to interpreters so that they may develop an intentional approach to revealing resource meanings.

4) Results Reveal that Opportunities for Intellectual Connections are More Prevelent than Opportunities for Emotional Connections

The results from the product analysis show that there were more opportunities for intellectual connections than there were for emotional connections in the interpretive products that were sampled (Table 4, pp. 51-52). All of the topic areas except one had more intellectual connection opportunities. In addition, products that focus on natural phenomenon (i.e., ecosystem, scientific findings) or animal and plant species had many opportunities for intellectual connections but few opportunities for emotional connections. Wilderness experience was the only category that seemed to provide the audience with more opportunities for emotional connections. It is noted that the program topic categories and the descriptions might have shown more variation in types opportunities had there been a larger sample size and/or an expansion to analyze other types of interpretive products such as guided walks, illustrated programs, or conducted activities. However, the sample size was large enough to present probable trend and suggest several key questions.

- Why are there more opportunities for intellectual connections to resource meanings?
- Are opportunities for emotional connections more challenging to develop?
- Are opportunities for emotional connections less important?
- Do some topics/meanings lend themselves more to intellectual or emotional connection opportunities with resource meanings?
- Do interpreters understand the difference and/or have they been trained in the various ways visitors connect to meanings?

- Do audiences form intellectual connections *before* they feel differently about the resource and resource meanings and therefore, does the provision of intellectual connections *set the stage* for subsequent emotional connection?
- Is a "balance" of intellectual and emotional connection opportunities needed?
- Does the nature of the resource determine the "proper balance" of the two types of connection opportunities?
- Will a predominance of opportunities for intellectual connections in interpretive products help the visitors to care more about the resource?
- What effect does graduate and undergraduate training and research methodology have on the interpreters' comfort level when facing public emotions?
- Does the researcher's academic training decrease the likelihood of identifying and categorizing the opportunities for emotional connections since identifying intellectual connection opportunities might be "more obvious?"
- Do researchers and interpreters in general have sufficient training to study and identify the association of emotions, relationships, and a stewardship ethic?

It is uncertain why, overall, there are more opportunities for intellectual connections than there are for emotional connections in the products examined. Possible explanations include: the conventional emphasis on the cognitive domain (cf. educational theories); a presumption that the visitors' chief interest is to connect intellectually with the resource (i.e., via learning); and the challenge of developing opportunities for emotional connections.

Despite ongoing debates on the difference between interpretation and education (and perhaps due to a lack of theories specific to interpretation), many interpretive scholars view

educational theories as the foundation of interpretation. For example, in Interpretation of Cultural and Natural Resources, Knudson, Cable and Beck (1995) devote a whole chapter to introduce major theories of how people learn. Many interpretive studies focus on the cognitive domain by exploring whether visitors achieve the educational goals and objectives of the interpretive programs (Knapp & Barrie, 1998; Beckmann, 1999; Koran, Willems, & Camp, 2000; Morgan, 2000). Further, in the area of museum studies, numerous books and chapters discuss learning theory and educational practice in a museum setting (Hatton, 1993; American Association of Museums, 1992; Hooper-Greenhill, 1994).

A second explanation as to why there are more opportunities for intellectual connections in interpretive products is the presumption that the chief interest of visitors is learning. Loomis (1996) and Cacioppo, Petty, Feinstein, & Jarvis (1996) emphasized visitors' "need for cognition." In contrast, reviewing the results from various empirical studies in outdoor recreation, Robert Manning (1999) highlighted two studies to indicate that there are a variety of motivations for people to visit areas such as parks, wildernesses, and rivers. For example, Knopf and Lime (1984) examined visitor motivations for river floating. The results suggested the following reasons that people float rivers (in rank order): view scenery, peace and calm, learn new things, develop skills, escape crowds, exercise, and be alone (Knopf & Lime, 1984). Another study compared the motivation domain between people who go to wilderness areas and nonwilderness areas (Driver, Nash, & Hass, 1987). Their results suggested that the chief interests for both types of visitors were to enjoy nature, share similar values, and obtain physical rest. In contrast, "outdoor learning" was never the main reason visitors to go to recreation sites (Table 6). Additionally, Cameron and Gatewood (2000) surveyed visitors to the National Museum of Industrial History in Bethlehem, New York, asking them, "What do you want to get out of your

visits to historic sites or museums?" They found that sixty percent of visitors wanted to gain knowledge and learn about the history, and forty percent of visitors seek "to gain personal experience with the site" (i.e., "a religious emotion or experience that can be awakened in the presence of something holy") or to have "pleasure" (i.e., fun, relaxation, and aesthetic enjoyment") (p. 109, 117). These observations suggest that motivations for visiting recreation sites are diverse. To assume that learning is the leading cause for site visitation seems inaccurate, and may lead to the wrong assumption that visitors mainly desire to connect with the resource intellectually.

Table 6. Comparative ratings of motivation domains (Adapted from Driver, Nash, & Hass, 1987; Reprinted from Manning, 1999, p. 165)

Table 7-3. Comparative ratings of motivation domains. (Adapted from Driver et al. 1987b.)

	Wilderness Areas			*Nonwilderness Areas*		
Motivation	*A*	*B*	*C*	*D*	*E*	*F*
1. Enjoy nature	1.5 (1)	1.5 (1)	1.6 (1)	2.4 (4)	1.7 (1)	3.1 (2)
2. Physical fitness	2.4 (4)	2.0 (2)	2.2 (2)	2.2 (3)	2.3 (4)	3.1 (2)
3. Reduce tensions	2.1 (2)	2.3 (4)	2.3 (3)	2.7 (5)	2.2 (3)	3.3 (4)
4. Escape noise/crowds	2.2 (3)	2.2 (3)	2.3 (3)	3.1 (9)	2.1 (2)	3.3 (4)
5. Outdoor learning	2.1 (2)	2.4 (5)	2.4 (4)	2.9 (8)	2.3 (4)	3.8 (6)
6. Sharing similar values	2.8 (5)	2.9 (6)	2.9 (5)	1.2 (1)	2.3 (4)	3.1 (2)
7. Independence	3.1 (7)	2.9 (6)	3.0 (6)	2.7 (6)	2.7 (5)	3.7 (5)
8. Family kinship	3.0 (6)	3.0 (7)	3.1 (7)	2.1 (2)	2.1 (2)	3.2 (3)
9.Introspection/spiritual	3.5 (8)	3.1 (8)	2.9 (5)	3.5 (12)	3.5 (8)	4.1 (8)
10. Considerate people	3.6 (9)	3.4 (9)	3.3 (8)	—	—	4.8 (10)
11. Achievement/ stimulation	3.9 (11)	3.1 (8)	3.1 (7)	2.7 (6)	3.1 (6)	4.2 (9)
12. Physical rest	3.8 (10)	4.3 (10)	3.3 (8)	3.2 (10)	2.1 (2)	3.0 (1)
13. Teach/lead others	3.7 (10)	4.3 (10)	3.7 (9)	3.6 (13)	3.1 (6)	5.2 (11)
14. Risk taking	4.7 (12)	4.8 (12)	4.5 (10)	2.2 (3)	2.2 (3)	5.3 (12)
15. Risk reduction	4.8 (13)	4.7 (11)	4.7 (11)	3.3 (11)	3.4 (7)	—
16. Meet new people	5.6 (14)	5.3 (13)	4.5 (10)	3.5 (12)	4.0 (9)	4.0 (7)

A = Weminuche (CO). B = Maroon Bells (CO). C = Shining Rock (NC). D = Little Sahara (UT). E = Arkansas River (CO). F = Lake Shelbyville (IL)
Ratings were made on the following nine-point response format (with numerical codes used to compute means): Adds (to satisfaction) most strongly (1), strongly (2), moderately (3) a little (4); neither adds nor detracts (5); detracts a little (6), moderately (7), strongly (8), most strongly (9).

An unofficial motto of interpretation states that, "Through interpretation, understanding; through understanding, appreciation; through appreciation, protection." Perhaps it will be impossible for any study to determine that audiences form intellectual connections before they feel differently about the resource and resource meanings. Perhaps it will not be reasonable to come up with a set of "fixed ratios" of intellectual connection opportunities over emotional ones for different program topic focus areas. Perhaps we can recognize that opportunities for emotional connections are harder to identify and articulate. And yet the study raises this question: "Is it adequate to rely primarily on opportunities for intellectual connections in interpretive products if the ultimate goal for interpretation is for visitors to *care* more about the resource, and to have a sense of stewardship that results in preservation actions?" Does understanding *have to* come before appreciation? Does understanding *have to* come from learning processes?

Each year the Interpretive Development Program of the National Park Service conducts a Certifier/Curriculum Coordinator Workshop at Mather Training Center in West Virginia. During the 2003 workshop, nearly fifty participants and instructors came up with a list of descriptors that captured what intellectual and emotional connections with resource meanings might look like (Table 7). Comparing the length of the two categories of connections, the list of descriptors for opportunities that provoke or inspire emotional connections is longer than the intellectual one. The list shows that potential types of emotional connections are not necessarily harder to identify. But perhaps opportunities for emotional connections are indeed harder to develop? Or, perhaps interpreters are uncomfortable in creating opportunities for the audience to connect emotionally with the meanings of the resource? Or perhaps interpreters have never been trained in techniques/methods for developing emotional opportunities? Or perhaps providing

information about the resource is easier than facilitating/discussing resource meanings, which requires the interpreters to develop a broader knowledge of both audience and resource?

Table 7. Potential Types of Connections with Resource Meanings (NPS, 2003*)

Intellectual: Which opportunities provoke or inspire…
Learning, insight, discovery, revelation, understanding of concepts, relationships, cause and effect, edification, wisdom, discretion, perceptiveness, unfolding, unearthing, disclosure, comprehension, intelligence, cognition, discernment, awareness, cognizance, knowledge, recognition, enlightenment, perspicacity, acumen, astuteness, judicious, reasoning, critical faculty, mindfulness, etc…
Emotional: Which opportunities provoke or inspire…
Awe, wonder, sympathy, curiosity, amazement, empathy, grief, regret, anger, respect, frustration, repulsion, rage, reverence, admiration, veneration, esteem, astonishment, apprehension, consternation, dismay, dread, fright, horror, panic, compassion, commiseration, concern, bewilderment, surprise, pity, rue, sorrow, lust, anguish, woe, distress, depression, vexation, desperation, sadness, contrition, remorse, fury, hostility, exasperation, ire, pique, annoyance, aggravation, disappointment, yearning, vehemence, wrath, aversion, disgust, happiness, joy, tranquility, contentedness, rapture, satisfaction, gratitude, complacency, relief, comfort, passion, envy, delight, gladness, exhilaration, ecstasy, pride, elation, etc…

* The list was first developed by David Larsen and Becky Lacome of the National Park Service and used as a training tool in the *Interpretive Analysis Model* (NPS, 2002b). The list then was expanded in the 2003 Certifier/Curriculum Coordinator Workshop and compiled by Peggy Scherbaum. It will probably keep expanding as NPS interpreters further identify and articulate the potential types of connections with resource meanings.

STUDY IMPLICATIONS

The study findings derived from the conceptual model and product analysis inform the process of interpretation in two significant areas: (A) our understanding of how interpretation *functions* and (B) our understanding of how opportunities for connections to meanings are *developed*. Implications for management, training, and research are discussed below.

Management Implications: The Function of Opportunities for Connections to Resource Meanings

The results of the study suggest the value of interpreting resource meanings in fostering stewardship. National Park Service managers seem greatly concerned about the agency's responsibility to provide visitors with meaningful experiences and to connect people to place. The 2001 edition of *Management Policies*, the highest policy guidance of the National Park Service, states:

> The "fundamental purpose" of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve resources and values….The fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States….It also includes deriving benefits (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment (NPS, 2000a, p. 12).

In a later chapter, it emphasizes the role of interpretation and education in communicating NPS resource meanings to visitors:

> The purpose of National Park Service interpretive and educational programs is to provide memorable educational and recreational experiences, and to foster the development of a personal stewardship ethic. The Service's programs will do this by forging a connection between park resources, visitors, the community, and park management (NPS, 2000a, p. 74).

In the remarks to her employees at the 2002 General Conference, Karen Wade, Regional Director of the Intermountain Region emphasized:

> We need to stretch out. To reach beyond out boundaries….We need to weave our places into the fabric of which [our visitors] are an inherent, undeniable part… [However,] people have to make [the discovery of land ethic] for themselves. And that is what the National Park Service is perfectly positioned to help them do. We need to connect people to place and watch the sense of connection expand.
>
> The places we shepherd have the power to touch the emotions that connect people—to tie them to human story and to the story of the earth. Powerful places can speak in the language of the human experience and draw together the cultural and natural landscapes of our lives (NPS, 2002c, p. 5).

Where developed opportunities for connections were identified in the interpretive product analysis, resource meanings were explained, discussed, described, compared, demonstrated, and examined. Developed opportunities for connections functioned by facilitating meanings in order to foster a sense of care and stewardship. In the product analysis, products that focused on interpreting wilderness and the idea of wilderness illustrated how connection opportunities function to foster care for the resource. They described in great detail how a wilderness area might look, smell, feel, and sound. They portrayed the presence and activities of wildlife especially birds and large predators. They explained the web of life and how an ecosystem functions. They expressed why people and Congress wanted to save resources like wilderness areas for future generations. In short, these products interpreted the meanings and significance of wilderness.

To carry these observations one step further, these products appear "in tune" with what visitors most desire to experience in a wilderness setting—physically and spiritually. They also help explain why people connect intellectually and emotionally with the meanings of wilderness. Studying visitor motives to visit Rawah Wilderness Area in Colorado, Brown and Hass (1980), concluded that wanting to "have a relationship with nature" was the primary reason for site

visitation. Other motives included escaping pressures, having a sense of autonomy and achievement, reflecting personal values, sharing and recollection, risk taking, and meeting/observing people (Brown & Hass, 1980). The opportunities for intellectual and emotional connections with the meanings of wilderness developed in these products emphasized the ideas of timelessness, beauty, and a sense of wonder. They also reflected notions including mystery, exploration, adventure, discovery, treasure, danger, challenge, sanctuary, solitude, and regeneration. If one considers wilderness as a projection of an American ideal and how other values of American culture are deeply embedded in the desire to visit a wilderness area, then does it follow that developed opportunities for connections in products interpreting the idea of wilderness demonstrate how understanding visitor meanings and interpreting resource meanings can go hand in hand? If one considers the likelihood of how meanings of the wilderness might lend themselves to provide personal transaction type of connections, then it would seem that using word pictures to create a holistic experience and understanding of resource meanings appears to strike the "proper balance" between the two types of connection opportunities. Ideally, this might help visitors care more about the resource and "fosters a sense of stewardship ethic."

Hopefully, by understanding both the meanings of the resource and how these meanings help sustain persons, cultures and ecosystems, interpretation can provide connection opportunities that are part of but transcend visitors' immediate life situations or experiences. Therefore, the value of the resource can be relevant to generation after generation. By communicating resource meanings and by connecting people to places, the responsibilities and obligations of the National Park Service in fostering a sense of care and stewardship can be realized.

Training Implications: The Development of Opportunities for Connection to Resource Meanings

Training in interpretation can benefit from the following two areas in this study: the conceptual framework of how connection opportunities function in interpretation and the identification and discussion of the four primary interpretive strategies to develop opportunities for connection with resource meanings. The IDP suggests that there are three components to developing interpretive opportunities: knowledge of the resource, knowledge of the audience, and appropriate techniques (NPS, 2000b). Interpretation may be better able to "meet visitors where they are along the stewardship continuum" and promote a resource stewardship ethic with a better understanding of resource and audience meanings and how to best use appropriate techniques.

The study suggests several questions: "Do interpreters have enough *knowledge of the resource* in terms of resource meanings? Are interpreters aware of the possibility that some resources/sites may lend themselves more to provoke emotional connections with resource meanings than to intellectual connections? How can interpreters be better trained to overcome the challenge that the nature of the resource and resource meanings may greatly influence the construction of opportunities for connections?" Consider the following quote from a visitor at the Lincoln Memorial documented in the study of Goldman and associates (2001):

> This is why I wanted to come here, because I am fascinated with American history in particular. I can't imagine a better place to come…I've read about it. I've learned about it. I've taken exams on it. But this actually makes it physical and makes it personal. You know, I've seen pictures of it. But there's nothing like walking through the Smithsonian and seeing how black people were treated at the turn of the century and how the whole civil rights movement has evolved. That's very emotional (Goldman et. al., p. 16).

If the ultimate goal of interpretation is to "provide opportunities for visitors to forge compelling linkages with the resources so that they develop an active stewardship ethic" (NPS, 2000b), then the study raises questions that ask: Do interpreters have sufficient *knowledge of the audience* in terms of how people ascribe, construct, share, or reflect upon meanings of the resource? To what degree are interpreters aware of the fact that visitors bring their own meanings even before they arrive on site? How can the conceptual model be used to inform interpreters about personal verses cultural transaction-type opportunities for connections? Consider another visitor quote in Goldman et al.'s study:

> What these three monuments mean to me is the spirit that pervades these grounds, [and this] is the spirit of sacrifice and humility, but at the same time, greatness. Because the people who died [in these conflicts] left their mark here, [they] left their mark on the whole country. The dream is not quite finished, but it is still in the process of becoming a flower. All these three sites come together and they bring that [message]—without pain there is no gain. I do believe that places like this are the cathedral of the soul. They bring out the depth of human beings and you begin to see what a nation is supposed to do to make all living things free (Goldman et. al., p. 12).

Perhaps interpretive trainers could benefit by asking, how could interpreters seize the opportunity to facilitate a two-way dialogue about the meanings of the resource embedded in a symbol, a myth or a popular (mis)conception? Or more realistically, how can interpreters know what the audience brings to the experience so they can develop a relevant program? Consider this conversation between two visitors also in Goldman et al's study:

> Man: "Another important point is that Lincoln believed deeply that the Civil War was about penance. We as Americans, both North and South, had committed a crime by buying into slavery. And we did not know when the war would end—there was a sentence there—maybe it will not end until every drop of blood is paid for with a drop of blood. That is very important. Americans tend not to want to think about the dark side. And what we have done is wrong. And that is something we can have with an historical perspective, [we can have] a new attitude. Lincoln is [a] every contrasting [person], and maybe Americans can share that feeling, the sense that this is our penance, and that this war is going to go on until God has decided that we paid for it."

Woman: “Maybe we have not yet paid for it.”

Man: “Exactly.”

Woman: “So there should be a connection between now and the past” (Goldman et al., p. 15).

The study results identify that a connection opportunity is developed by intentional methodology by the interpreter. Therefore, the methodology must be informed by knowledge of both resource and audience in order to select the most *appropriate techniques* for developing opportunities for connections. How can interpreters be trained to use a full range of techniques/methods (or sets of methods identified in this study as interpretive strategies) to facilitate access to resource meanings for specific audiences? What techniques work best to facilitate opportunities for emotional connections or for intellectual connection to which types of meanings? In short, how can interpreters best be trained to match multiple resource meanings to multiple audience perspectives?

Interpretive Planning Implications: The Mapping of Opportunities for Connection to Resource Meanings

Three key areas of this study seem to also have implications for interpretive planning: (1) how meanings of a particular resource might lend themselves to provide personal transaction type of connections and/or cultural transaction type of connections proposed in the conceptual framework, (2) how people form meanings by ascribing, constructing, sharing, making, or realizing, and (3) how interpretive strategies might function to facilitate these opportunities for connections. Would it be useful for a planning process to conceptually “map out” many of the possible opportunities for connections in a park site and therefore provide multiple (or ideally maximum) opportunities for connections while “meeting visitors where they are along the

stewardship continuum?" Would it be feasible to include this process (as proposed in the meaning/interpretation continuum and the conceptual framework in Figure 2) in the comprehensive interpretive planning process for each park? And how would that further fulfill the National Park Service's obligation to provide for the enjoyment and enrichment of current and future generations?

Future Research Implications and Needs: The Further Understanding of Opportunities for Connection to Resource Meanings

The study recognizes that the four interpretive strategies identified from data analysis are not the only strategies that can be used to develop opportunities for connections. The study suggests that additional research needs to be conducted to identify *other strategies* that interpreters can use for guided walks, conducted activities, illustrated programs or interpretive media. In addition, two broad types of research are needed to further explore the function and outcomes of interpretive opportunities. First, research on the emotional/spiritual dimension of visitor experiences from interpretation are needed. Second, studies on the whole visitor experience of having a sense of connection with resource meanings facilitated by interpretation would be beneficial.

Findings from this study generally suggest that fewer opportunities are developed in interpretive products for the visitors to connect emotionally with the meanings of the resource. The implications of how emotional connections facilitate a sense caring and stewardship can be significant. For example, some other studies started to show how people form strong emotional/ spiritual attachments with places and how those attachment contributes to a sense of ownership and conservation (Fishwick & Vining, 1992; Williams & Stewart, 1998; Galliano & Loeffler,

1999). However, current understanding of the emotional dimension of visitor experience *from interpretation* remains primitive.

Littlejohn (2002) points out: "How an emotion is labeled, what it is called, is instrumental in how the emotion is experienced" (p. 168). For psychologists, any agitation or disturbance of mind, feeling, passion or any vehement or excited mental state can fall into the categories of emotions (Wade & Travis, 2002). Psychological theories examine mental "feelings" or "affections" such as pleasure or pain, desire or aversion, surprise, fear or hope (Damasio, 1999a). Recognizing the power of emotions, some theorists continue to explore how emotions have a broad affect ranging from experiences, attitudes, decision-making, and a sense of determination, to the immune responses of the body to combat cancer (Glassman, 1985; Damasio, 1999b). Poet Ralph Waldo Emerson commented on the transformational power of friendship by saying,

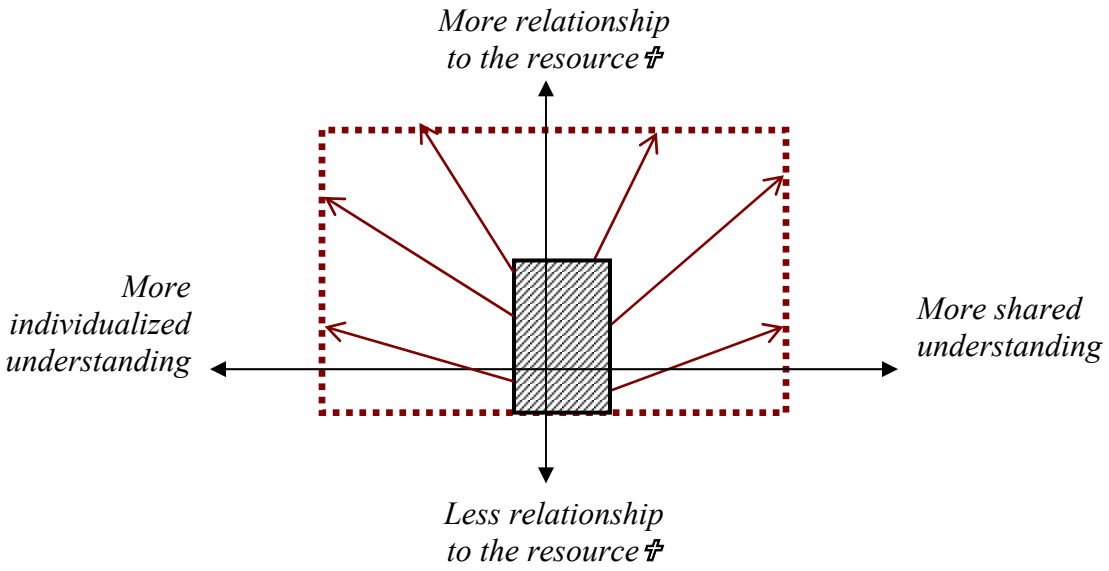
> The effect of the indulgence of this human affection is a certain cordial exhilaration. In poetry, and in common speech, the emotions of benevolence and complacency which are felt towards others are likened to the material effects of fire; so swift, or much more swift, more active, more cheering, are these fine inward irradiations. From the highest degree of passionate love, to the lowest degree of good-will, they make the sweetness of life (Emerson, 1841, p. 81).

On the other hand, several social constructionists argue that emotions are products of social constructs. Rom Harré (1986) believed that emotions, like any other aspect of human experience, are constructed concepts. He also suggested that emotions are determined by the local language and moral orders of the culture or social groups. Studies that examine whether it is more challenging to develop opportunities for emotional connection than for intellectual connection are needed in order to understand how emotional/spiritual attachments instill a sense of stewardship.

Secondly, studies are needed to explore the whole visitor experience of having a sense of connection with resource meanings facilitated by interpretation—from beginning to end. A study

like this should encompass the interpreters' development of connection opportunities based on resource and visitor meanings, the identification of connection opportunities, and conduct visitor interviews to verify and understand the connections being made. Such studies may be able to examine the desired outcomes of interpretive opportunities proposed in Figure 3 (*supra*, p. 38, reprinted below). Such studies might further address how and why interpretation can foster the "development of a personal stewardship ethic" by "forging a connection between park resources, visitors, the community, and park management" as suggested in the NPS's *Management Policies* 2001.

Figure 3. Desired Outcome for Visitors Exposed to Interpretive Programs as A Function of Change in Two Dimensions: Understanding and Relationship



▨ Indicates a hypothetical starting point for a visitor to an interpretive program
✠ For the purpose of this framework, the "resource" is conceptualized broadly as an object, event, person or place.

Study Strengths and Limitations

The strength of the study includes internal validity based on the logical analysis of the results, comprehensive description of opportunities for connections in the interpretive products collected, and cross-checked reliability of the coding scheme. This study contributes to fundamental interpretive knowledge and research tradition in three perspectives, including exploratory, explanatory, and descriptive.

Readers may observe that Chapter Four—the Results section was laden with descriptions, quotes, and observations. According to Patton, "Evaluation reports based on qualitative methods will include a great deal of pure description of the program" (p. 147). In the midst of debates over the appropriate method in analyzing text, the hermeneutic circle has been used to understand the meanings of the text. The principle of the hermeneutic circle relies on going from general to specific and from specific to general (Ricoeur, 1974) and by examining a specific text in terms of a general idea of what the text may mean, then modifying the general idea based on the examination of the specific text. As an ongoing process, the analysis moves back and forth between the general and the specific, the part and the whole. The concept of employing unit(s) of analysis is indeed determining the *part*. Although this method may seem circular, it establishes the difference between interpretive product analysis (cf. the approach of this study) and evaluation of interpretative outcomes. Instructing on the processes of qualitative data analysis, Patton (1987) explained:

> *Analysis* is the process of bringing order to the data, organizing what is there into patterns, categories, and basic descriptive units. Interpretation [of qualitative data] involves attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions (p. 144).

Similarly, Thomas Kuhn (1962) stressed the importance for identifying the proper unit(s) in sampling and analyzing data. Appropriate units of analysis can best reflect the nature of the problem, experience, or phenomenon (Weber, 1990). Currently, there are some variations in the variables used to measure interpretive effectiveness. The majority of the studies have used types of media for evaluation purposes. Others use type of resource, goals and objectives of interpretation, or audience attitudes and behavior change. This study examines and analyzes program content to better understand the elements of interpretive *potential* within an interpretive program or product.

Certainly, each type of unit of analysis has advantages and disadvantages. Using a unit of analysis based on the opportunities for intellectual and emotional connections provides insight from the perspective of the potential for experiencing the phenomenon. Secondly, it allows for the interpretation of results across a broad range of interpretive products. Thirdly, it focuses on the systematic structure and organization of the opportunities for intellectual and emotional connections. The coder reliability is comparable with three additional coders for face validity.

The limitations of the study are partially discussed in the need for future research. This study informs our understanding of the process and function of opportunities for connections. However, without the actual input from the visitor perspective, the study cannot provide a holistic documentation of the connection process from beginning to end as proposed in Figure 3.

CONCLUSIONS

Based on the conceptual model and the product analysis, the study identifies the characteristics and functions of opportunities for connections with resource meanings. An opportunity is a catalyst for individuals to have personal and/or cultural-types of transactions. A

connection can function at a personal level from the meaning-forming process to provide a more individualized understanding and/or from the meaning-revealing process to facilitate more relationship to the resource. The research process illustrates how the theory review and product analysis should go hand-in-hand. In addition, the collaboration between interpretive researchers and practitioners may inform each other and further advance the profession of interpretation. In Daniel Dustin's (1994) words:

> Management could enhance opportunities for spiritual experiences through innovations in design, interpretation, and educational services. In this regard, the value of research on spiritual benefits is not likely to be in what it does for prediction and control, but in what it does for understanding and empowerment. This research could unleash the human potential (p. 96).

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APPENDICIES

APPENDIX A: THE INTERPRETIVE PRODUCT SUBMISSION-CERTIFICATION PROCESS OF THE IDP

The Certification Process of the IDP Prepared by Lacome (1998)

I. Process in
   A. Receipt of product
      -E-products/copy to disk
      -Other products/date stamp
   B. Log in/assign certifiers
   C. Duplicate products
      -Video tapes
      -Hard copies

II. To certifiers
   A. Prep/send mail products
      -Send E-forms/notification
   B. Send E-products/E-forms/notifications
   C. File log sheet
   D. Certifier question/needs

III. From certifiers
   A. Copy E-responses to disk
   B. Track responses

IV. Process out
   A. Compose response letter
   B. Log sheet data
   C. To Training Manager
      -Review/edit
      -Print/sign
   D. Prepare response mailings
   E. File log sheet

V. Product tracking as needed
      -Park/submitter status requests
      -Certifier problems/delays
      -Certifier reminders

VI. Tape recycling

VII. File/form maintenance
      -E-files
      -Hardcopy files
      -Xerox forms/rubrics

APPENDIX B: COVER LETTER FOR REQUESTING PERMISSION

Date

Interpreter Name
Interpreter Park Name
Park Address

Dear Ranger:

This letter invites you to join an interpretive study. My name is W. Jasmine Chen. I am a doctoral candidate at West Virginia University and I am studying products submitted to the Interpretive Development Program's certification process. My study is designed to help the profession of interpretation better understand the variety of opportunities for intellectual and emotional connections to the meanings of the resource as well as the elements that define those opportunities.

This effort is a part of the collaboration between the University and the Stephen T. Mather Training Center to further improve and evolve the ideas and practices of the Interpretive Development Program. We are asking for your support. You can join the study by granting your permission for me to analyze the interpretive product that you recently submitted to the Mather Training Center for review. All of the research processes as part of the study will be confidential.

By studying your submission and others, I hope to identify how interpreters provide opportunities for intellectual and emotional connections between the resource and the visitors. The study aims to expand the theoretical basis for the National Park Service's Interpretive Development Program and provide insights that can be applied to interpretive program development, the certification process, and interpretive training. I will use several methods of research design, including archival research, content analysis, and qualitative analysis. Your participation in this study is voluntary, and will be separate from every aspect of the National Park Service certification/review process. All information gained will be compiled generically. Should you choose to participate, your work will not be used or isolated in a way that reveals your identity in any resulting reports. Supervisors, certifiers, the Training Manager for Interpretation and your supervisor will have no knowledge of whether or not you choose to participate.

Your contribution will significantly assist this study in developing essential professional concepts and lead to greater understanding and insight for all who practice the art of interpretation. The study of interpretation is, in fact, the study of the process that fosters the relationships between humans and places. Please join "Connecting Emotionally and Intellectually: An Interpretive Study" by giving your permission! Your contribution is very important and deeply appreciated.

Sincerely,

_____
W. Jasmine Chen

APPENDIX C: PERMISSION FOR PARTICIPATION

I hereby grant permission for the researcher from West Virginia University to obtain a copy of my interpretive program/product from Mather Training Center. I agree to allow my product to be reviewed, transcribed, studied, and anonymously referenced in order to analyze opportunities for intellectual and emotional connections between the meanings of the resource and the interests of the visitor. I understand that the use of my product will be confidential.

Printed Name: _____

Signature: _____

Whether or not you agree to participate in the study will have no bearing on the certification process. Results of the study will be available upon request when completed.

_____ I agree to allow my program/product to be used for the WVU's connection study as described above.

_____ I do NOT agree for my program/product to be used for WVU's connection study as described above.

Please return this form with the enclosed envelop to:

W. Jasmine Chen
P.O. Box 666
Harpers Ferry, WV 25425-0666

Study 2: Connecting Emotionally & Intellectually

W. Jasmine Chen, a doctoral candidate and Dr. Theresa Goldman, are currently exploring how interpreters provide opportunities for audiences to make their own intellectual and emotional connections with the meanings of the resource. They hope to isolate and more specifically define the elements of interpretation that make up these opportunities as well as identify techniques for creating them.

You Can Help!

Ms. Chen and Dr. Goldman would like to conduct both qualitative and quantitative content analysis on a sampling of interpretive talk and interpretive writing products submitted for certification. To be successful, they need the participation of interpreters who will allow their work to be examined.

The WVU's Interpretive Study Is Entirely Independent of the Certification Program.

Participation in the study is entirely anonymous and will have no effect on the outcome of the certification process. Supervisors, certifiers, the Training Manager for Interpretation—none of these people will have any knowledge of who is participating.

Your Participation Will Make A Difference!

All submitted interpretive products will help identify patterns of success and a more complete understanding of interpretive connections. Study results will be used to refine the product review and certification process, evolve the practices and ideas of the Interpretive Development Program, train interpreters, contribute to a stronger profession, and more effectively support the preservation mission.

Please Sign & Return the Permission for Participation Form Today!

Have Questions?
Please Contact:
W. Jasmine Chen, Doctoral Candidate
wchen3@wvu.edu
(304) 535- 2590
P.O. Box 666, Harpers Ferry, WV 25425 or
Dr. Theresa Goldman
twang3@wvu.edu

WestVirginiaUniversity

CONNECTING EMOTIONALLY & INTELLECTUALLY: AN INTERPRETIVE STUDY

APPENDIX D: "CONNECTING EMOTIONALLY & INTELLECTUAL: AN INTERPRETIVE STUDY" PAMPHLET

A Partnership: West Virginia University & the National Park Service

West Virginia University (WVU) and the National Park Service (NPS) are working together to assist in the professional development of interpreters. The Training Manager for Interpretation, Education, and Cooperating Associations, Stephen T. Mather Training Center, has asked WVU to conduct a series of studies related to the ideas and practices of the Interpretive Development Program. The NPS hopes to use these findings to improve the Interpretive Program and the delivery of training. The partnership envisions collaborative projects including interpretive research, program development, and opportunities for graduate degrees in interpretation.

Study 1: Visitors & the Meanings of Place

What meanings do audiences assign a park before they visit? Could programs be more effective if interpreters knew what ideas, values, and concepts audiences associate with the place when they arrive? WVU explored these questions at the National Mall—National Capital Parks-Central. The study conducted and analyzed transcripts from focus group interviews with park visitors who had not attended interpretive programs as well as those who had.

Preliminary Results: Interpretation Makes a Difference!

Audiences actively ascribe meanings to site resources. Visitors think about resource meanings, discuss those meanings, and create new understandings and meanings for themselves and others.

> *"What these three monuments mean to me is the spirit that pervades these grounds,...the spirit of sacrifice and humility, but at the same time, greatness. Because the people who died [in these conflicts] left their mark here. [they] left their mark on the whole country. The dream is not quite finished, but it is still in the process of becoming a flower. All these three sites come together and they bring that [message]–without pain there is no gain. I do believe that places like this are the cathedral of the soul. They bring out the depth of human beings and you begin to see what a nation is supposed to do to make all living things free."*

Audiences seek experiences that link the tangible resource to its intangible meanings. Visitors want to find meanings they can relate to personally and that connect them to the resource.

> *"I just thought that the [ranger program] was an incredible presentation, probably one of the best I've ever heard. I really appreciate the way the ranger made the whole thing come alive. And I thought about it in terms of how unpopular Lincoln was in his day and yet he persevered and stuck with his ideals. The ranger talked about how Lincoln was maligned in the press on a daily basis, and yet he stuck with his ideals. I like that the ranger shared that with people—the struggle that Lincoln went through."*

Interpretation facilitates both emotional and intellectual connections to the meanings of the resource. Interpretation provokes visitors to learn or think about the resource in a new way as well as feel differently about the resource.

> *Visitor 1: "We walked through and we didn't understand what we were seeing. [What the ranger] described changed the whole picture for us."*
>
> *Visitor 2: "We were the lucky ones. How many people walk through it but do not know what they are seeing?"*

If you would like to learn more about the Visitors and Meanings of Place study, see "Clicking the Icon: Exploring the Meanings Visitors Attach to Three National Capitol Park Memorials" published in the *Journal of Interpretive Research* (2001, Winter), Volume 6, Issue 2 by Goldman, Chen, and Larsen.

APPENDIX E: COMPETENCIES OF THE INTERPRETIVE DEVELOPMENT PROGRAM

"The Foundation" of the Curriculum:

Fulfilling the NPS Mission: The Process of Interpretation (Module 101)

The Essential Benchmark Competencies

Entry Level Competencies:

- --Demonstrating Successful Informal Visitor Contacts (Module 102)
- --Preparing and Presenting an Effective Interpretive Talk (Module 103)

Developmental Level Competencies:

- --Prepare and Present an Effective Conducted Activity (Module 210)
- --Prepare and Present an Interpretive Demonstration or Other Illustrated Program (Module 220)
- --Effective Interpretive Writing (Module 230)
- --Present an Effective Curriculum-based Program (Module 270)

Full Performance Level Competencies:

- --Planning Park Interpretation (Module 310)
- --Interpretive Media Development (Module 311)
- --Leading Interpreters: Training and Coaching (Module 330)
- --Interpretive Research and Resource Liaison (Module 340)

· *W. JASMINE CHEN* ·

P.O. Box 1368, Harpers Ferry, West Virginia 25425, Ph. (304) 535-6215, E-mail: wjasminechen@yahoo.com

Ph.D. in Forest Resource Science, West Virginia University, Morgantown, 2003

Dissertation Title: "The Craft and Concepts of Interpretation: A Look at How National Park Service Interpreters Reveal Meanings and Provide Opportunities for Connections"

Advisor: Dr. Theresa Goldman Coble

M.S. in Recreation, Parks, & Tourism Resources, West Virginia University, Morgantown, 2000

Thesis: "Exploring Visitor Meanings of Place in the National Capital Parks—Central"
Advisor: Dr. Theresa Goldman Coble

B.A. in English Language & Literature, Providence University, Tai-Chung, Taiwan, 1995

PROFESSIONAL EXPERIENCE

National Park Service (NPS), Mather Training Center, Harpers Ferry, WV 2001-present
Volunteer in Park & Doctoral Intern

- Involved with the Interpretive Development Program (IDP) including interpretive training materials development and interpretive program analysis; program management such as processing interpretive products sent for certification review, upgrading product management database, generating statistical reports, reorganizing anchor program library, strengthening IDP website, communicating with certifiers, and assisting in development of training materials. Supervisors: Becky Lacome & David Larsen.

West Virginia University (WVU), Morgantown, WV 1997-2002
Instructor & Research Assistant

- Co-taught RPTR 442: "Environmental, Historical and Cultural Interpretation", Spring 2001-2002; shared the responsibility of course design, syllabus preparation, lesson planning, lecturing, leading class discussion, advising students, and conducting student evaluation. Instructor/Advisor: Theresa Goldman Coble
- Worked on a collaborative project with the Stephen T. Mather Training Center, NPS, related to interpretative theory and professional training and development, assisted with focus group interviews on a visitor meanings of place study in Washington, D.C. and Virginia, conducted data collection & analysis, presented results at workshops and conferences.
- Assisted in the FOR 470: "Meanings of Place" course; developed, launched & managed course web-site, conducted computer skills workshops, led class discussion, and participated in two of the Community Design Team visits: Grantsville and Madison, West Virginia.

Green Party Taiwan, Taipei, Taiwan 1995-1996
Communication Coordinator

- In charge of all aspects of communication for legislative planning & lobbying; communicated with liaisons from other non-government organizations regarding legislation; coordinated

meetings & discussion sessions; streamlined PR processes for preparing the official stand of Green Party Taiwan.

Kenting National Park, Kenting, Taiwan 1993-1995
Seasonal Interpreter

- Interpreted park resources to general visitors; gave special topic programs on birding, butterfly walks, and oral storytelling to family groups; conducted environmental education programs for school groups.

Wild Bird Association of Taiwan, Tai-Chung, Taiwan 1994-1995
Volunteered Field Investigator

- Assisted in the bird population investigation in the elevated forest around the headwater of the Da-Jar River.

National Natural Science Museum, Tai-Chung, Taiwan 1994-1995
Volunteer Exhibit Interpreter

- Delivered interpretative programs at the Ceramic Art in Ancient China Exhibit; demonstrated the ancient skill of pottery making.

YMCA, Tai-Chung Branch, Taiwan 1992
Summer Youth Camp Group Leader

- Led nature hikes and group discussion in the Discover Nature Program for middle school students.

ACADEMIC/TEACHING EXPERIENCE

RPTR 442, Environmental, Historical and Cultural Interpretation (2001-2002)—Co-instructor
FOR 470, Meanings of Place (2000)—Co-instructor

PUBLICATION

Research Articles and Chapters

Goldman, T. L., Chen, W. J. & Larsen, D. L. (2001). Clicking the icon: Exploring the meanings visitors attach to three National Capital Park memorials. Journal of Interpretation Research, 6(1), 3-30.

Technical Reports

Chen, W. J. (2002). Wolong interpretive master plan: A project for China Research and Conservation Center for the Giant Panda (Translation), US-China Environmental Fund, Madison, WI and Beijing, China. [On-line]. Available: http://www.jonesandjones.com/intro/index.html

Chen, W. J. (2001). Certified interpretive guide training workbook (Translation), Unpublished manuscript, National Association for Interpretation, Fort Collins, CO. (Original work published 2002)

Chen, W. J. (2000). Exploring visitor meanings of place in the National Capital Parks—Central. Electronic master's thesis, West Virginia University, Morgantown. [On-line]. Available: http://etd.wvu.edu//ETDS/E1761/Chen_Wei-Li_Jasmine_thesis.pdf

Chen, W. L. J., Wang, T. L., & Larsen, D. L. (2000). Understanding visitor meanings of place at National Capital Parks—Central: A source for developing interpretive programs (Tech Rep.). Morgantown, WV: West Virginia University.

PROFESSIONAL/ACADEMIC HONORS AND AWARDS

National Interpreter Workshop Scholarship Recipient, NAI, 2002
Kevin Kinsley Outstanding Graduate Student Award, WVU, 2002
*McIntire-Stanis Graduate Assistantship, 1998-2002
College of Agriculture, Forestry, and Consumer Sciences Doctoral Student Travel Grant, WVU, 2001
Office of Academic Affairs and Research, Doctoral Student Travel Grant, WVU, 2000
Outstanding Lecturer, Natural Resources Seminar, Ministry of Finance, Taiwan, 1993
Model Student Award, Providence University, Taiwan, 1992

PROFESSIONAL DEVELOPMENT

NAI's Train the Trainer, Fort Collins, Colorado, 2001
Teaching and Learning on the WWW, WVU, 2000
Technology in the Classroom, WVU, 2000

INVITED LECTURES AND CONFERENCE PRESENTATIONS

Guest Lecturer/Facilitator

RPTR 434, Policy and Ethics in Recreation, Forestry and Natural Resources, 2002
FOR 470P, Human Dimensions in Natural Resources and Tourism, April 2002
LARC 360, Natural System Design, October 2000
FOR 225, Global Forest Management, November 1999-2000

International

Brochu, L., Merriman, T., Blodgett, S., Chen, W. L. J. & Brighton, J. (2001, May). Interpretive training and planning sessions. NAI's Interpretive China Program, May 14-29, 2001. Great Wall, Wolong Giant Panda Reserve and Sichuan University, China.

National

Chen, W. L. J. & Coble, T.G. (2003). Meanings and opportunities for intellectual and emotional connections: Identifying the essensce if interpretation. Interpretive Leadership Seminar, Mather Training Center, Harpers Ferry, West Virginia.

Goldman, T. L. & W.L. J. Chen (2002, May). Understanding park visitors. Interpretive Leadership Seminar, Mather Training Center, Harpers Ferry, West Virginia.

Brochu, L., Merriman, T., Blodgett, S., Chen, W. L. J. & Brighton, J. (2001, November). Global perspectives on interpretive planning. Concurrent session at the 2001 National Interpreters Workshop, November, 6-10, 2001, Des Monies, Iowa.

Goldman, T. L. & W.L. J. Chen (2001, May). Understanding park visitors. Interpretive Leadership Seminar, Mather Training Center, Harpers Ferry, West Virginia.

Chen, W.L., Wang, T. L. & D. L. Larsen (1999, April). Exploring visitor meanings of place and enriching interpreter knowledge of the audience in the National Capitol Parks. Paper presentation at the 1999 Northeastern Recreation Research Symposium. Bolton Landing, New York.

Wang, T. L., Chen, W.L., & D. L. Larsen. (1999, March). Connecting visitor meanings of place to resource stewardship. Paper presentation at the 10th Conference on Research and Resource Management in Parks and on Public Lands, The George Wright Society Biennial Conference, March 21-26, 1999, Asheville, North Carolina.

Wang, T. L., Chen, W.L., & D. L. Larsen. (1998, October). Interpretation initiatives in the National Park Service: Understanding visitor meanings. Paper Presentation at the 1998 National Interpreters Workshop, October 20-24, 1998, Anchorage, Alaska.

PROFESSIONAL SERVICE

Interpretive Development Program (NPS) Certifier/Curriculum Coordinator, 2003-2005
One of three national judges for Freeman Tilden Award, NPS, 2002
Community Design Team Visit, Madison, WV, November 2001
Community Design Team Visit, Grantsville, WV, August 2001

AFFILIATIONS/MEMBERSHIPS

Association for Kenting National Park Interpreters
George Wright Society
National Association for Interpreters
Xi Sigma Pi—National Forestry Honor Society

PROFESSIONAL LICENSES/CERTIFICATIONS

Certified Interpretive Trainer, NAI (2001-2004)
Certified Project WET (Water Education for Teachers) Instructor, WV DEP (2001)

TECHNICAL AND SPECIALIZED SKILLS

Instructional Tech	LCD projector, slide projector, overhead projector, video camera, scanner
Distance Learning	WebCT, Abrobat
Graphic Design	PageMaker, Photoshop, Publisher
Web Page Design	Dreamweaver, FrontPage, HTML, FTP
Office Applications	Access, Excel, Powerpoint, Word
Statistical Package	SPSS, MiniTab
Content Analysis	Minnesota Contextual Content Analysis (MCCA)
Search and Reference	EBSCOHost, JSTOR, E-Oxford English Dictionary, ProCite

LANGUAGE ABILITIES/SKILLS

Native languages	Taiwanese and Mandarin Chinese
"Foreign" language	English

REFERENCES

Dr. Theresa Goldman Coble, Advisor—Stephen F. Austin State University
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